LOGLAN 3

UNDERSTANDING LOGLAN

VOLUME 3

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Contents

Sau la Tisra

These lessons conclude *Understanding Loglan*. The three volumes introduce you to all the main structures of the Loglan language.

Where do you go from here? By subscribing to *Lognet*, you will be kept up to date with the latest developments in the language, and news of the Loglan community. And by subscribing to *La Logli*, you will receive a series of Loglan texts which will help to stabilize and extend your Loglan abilities.

Is that all you need to do? Certainly not. Learning a language is not just learning to decipher, rather laboriously I fear, a few written texts. You need to begin to use the language to express your own thoughts—at first haltingly, but with increasing fluency. If you were learning French I'd advise you to go to France. Since you are learning Loglan, you need to visit Loglandia. As you've heard in Lesson 16, L is a virtual country. If you have a computer and modem, Loglandia is just a few keystrokes away. If you have no computer, why don't you inquire about the Loglan Network Scholarship Scheme? Write to The Loglan Institute for further details.

Loglan is the language of the future, and we are looking at all the cutting edge communication media that may help the language develope to fit its role. It won't be long before we logli are talking Loglan aloud to each other across the Internet. More generally, in the multiple cross-translations that are needed for non-English-speakers to fully participate in the world wide communications explosion, Loglan could become an ideal intermediate language, enabling translation from Greek to Korean as easily as from English to German.

We apologize for the errors that you may have noticed in these three volumes. Several that occurred in *Lo Nurvia Logla* are noted in the translations below. Others have been found, and yet others are no doubt still to be found, as we edit these three slim volumes into a single volume, the authoritative introduction to Loglan. Bear with us, while that process is under way.

—APL

Lesson 13: Togetherness and Separateness

Lo Mipli Steti

1. **Ri[1] mrenu pa kamla.**
   Several men came.
2. **Ro bukcu ga treci.**
   Many books are interesting.
3. **Re[2] le mrenu pa kamla.**
   Most of the men came.
4. **Eu raba ravi[3] logpli.**
   Suppose everyone everywhere used Loglan.
5. **Raba ravi *logpli*, eu!**
   Everyone everywhere *uses Loglan*, let's suppose!
6. **Eu raba ravi cao *logpli* !**
   Suppose everyone everywhere (emphatic) used Loglan!
7. **Safoniba[4] vi bukcu.**
   About forty things here are-books.
   There are about forty books here.
8. **Sa[ra][5] le nema mrenu pa kamla.**
   Almost all of the hundred men came (individually).
9. **Feni le nema mrenu pa kamla.**
   Fifty of the hundred men came (individually).
10. **Pife[6] le nema mrenu pa kamla.**
    Point-five of the hundred men came (individually).
11. **Pife le mrenu pa kamla.**
    Point-five of the (two or more) men came (individually).
12. **Leu nema mrenu pa kamla.**
    The group of a hundred men came (together).
13. **To[7] leu nema mrenu pa kamla.**
    Two of the hundred-man groups came (separately).
14. **Pife leu nema mrenu pa kamla.**
    Half of the hundred-man group came (individually).
15. **Nekuato leu nema mrenu pa kamla.**
    Half of the hundred-man group came (individually).

16. **To[8] le nema mrenu pa kamla.**
    Some two of the hundred-man multiple came (individually).
17. **Tocu[9] le nema mrenu pa kamla.**
    Some two-of the hundred-man group came (together).
18. **Pifecu[10] leu nema mrenu pa kamla.**
    Half of the hundred-man group came (together).
19. **Le tera[11] ga spuro gritu.**
    The trio expertly sings. (sings expertly)
20. **Le to,[12] tera ga spuro gritu.**
    The two trios expertly sing.
21. **Ti neteri[13] cirpai.**
    This is the thirteenth lesson.
22. **Ei ti nero[14] treci cirpai?**
    Is this the-number-one-most interesting lesson?
    Is this the most interesting lesson?
23. **Hu jolkeo [ti] [le nedpao midnai]?**
    What is a clocktime [ending at this moment] [and beginning at the previous midnight]?
    What time is it?
24. **Lio netohei pio[15] nefemeo.**
    The number 12h plus 15m.
    Twelve-fifteen. (Quarter past noon.)
25. **Lio neanefemeo[16] pio netehei.**
    The number -15m plus 13h.
    Fifteen minutes before one PM. (Quarter 'til one.)

Lona Cninu Purda

Predicates

Word	*Definition*	*Clue words*
cirpai	... is a lesson in course/subject ...	[**CIRna PArtI** = learn-part]
pligo	... is an apple from tree/orchard ...	(*apple* [**aPL**])

Little Words

-cu a suffix attaching to number words, to form an indefinite set descriptor

eu suppose that ... (contrary-to-fact supposition marker introduced in the previous reading.)

nea negative ... (of negative numbers)

nero #1, the most ... (See note 11)
neteri thirteenth (**nete -ri**)
pi [decimal] point (See note 6)
pio plus (introduced in the previous reading)
-**ra** ...-some, is a group with ... members (the cardinal suffix; see note 11.)
ravi everywhere (all-here) (a quantified inflector; see note 3.)
re most (See note 1.)
ri a few/several (See note 1.)
-**ri** ... is the -th member of group .... (the ordinal suffix; see note 13.)
ro many (See note 1.)
-**ro** ... is the nth best/highest in quality ... among candidates/ members of set ... . (See note 14)
sa almost ... of; (used alone as an abbreviation of **sara**) almost all of; (See notes 4 and 5.)
tera trio, threesome (**te -ra**)

Lopo Lengu Klimao

In this lesson we cover not only the issue of togetherness vs. separateness but also more general ways of counting, using vague words such as *all*, *many*, and *most of*. We'll also look more closely at how to tell time.

Notes:

1. There are two series of indefinite numbers in Loglan: the **ra** series and the **sa** series. Both can be used in place of numbers, but only the **sa** series can be used with numbers. The **ra** series is longer, consisting of

ra	*all*	**ro**	*many*	**ru**	*enough*
re	*most*	**ri**	*several, a few*		

Grammatically, sentences (1-2) are just like the sentence **To mrenu pa kamla.**

2. This sentence is just like **To le mrenu pa kamla.** Note that **ra** is almost never used before a descriptor. After all, if **Le mrenu pa kamla**, then certainly **Ra le mrenu pa kamla**.

3. The **ra** series (and the **sa** series, see Note 4, below) may be used with inflectors, just like other number words: **rana** *always*, **rena**

most of the time, **rona** *often*, **suna** *sometime* (at least once); **ravi** *everywhere*, **revi** *(in) most places*, **suva** *somewhere* (in at least one place).

4. The **sa** series may be used with or without numbers. (Remember, you have to attach a number to something; thus **safoniba** *about forty things*.) The **sa** series is smaller than the **ra** series:

sa	*almost, about*
si	*at most*
su	*at least*

5. Surprise! When **sa**, **si**, and **su** are used without a number, they act as abbreviations. (You could say that they are never used without a number or numberlike word, though that word may go unsaid or unwritten.) The abbreviations are

sa[**ra**]	*almost all*
si[**ne**]	*at most one*
su[**ne**]	*at least one*

6. Example (10) says exactly what (9) says. The Little Word **pi** means *point*, as in *decimal point*. It's always spoken, as it usually is in English. But be careful, here! Sentence (11) does not mean that half of one man came—for example, in a basket! To report that gruesome fact, you'd have to insert a **ne** between **le** and **mrenu**, as in **Pife le ne mrenu**, or between **pife** and **le**, as **in Pife ne le mrenu**.

Shifting to things less horrifically partitioned, this convention means that **pife le pligo** never means *half the apple* ; it always means *half of some definite multiple of two or more apples* . To say *half the apple* , you'd have to singularize the description first, as in **le ne pligo** or **ne le pligo**, or just **ne pligo**. Then **pife le ne pligo**, **pife ne le pligo**, and **pife ne pligo** would indeed mean *half of the one apple (I have in mind), half of one of the apples (I have in mind),* and *half of an (any one) apple*, respectively. By the way, **pife pligo** is equivalent to **pife ra pligo**, which means *half of all the apples there are.* Better to say **sapife pligo** *about half of all apples* if you're given to this kind of talk!

7. With the set descriptors **leu** and **lea**, the numbering convention is a little different. If integers are used before such descriptions, as

in (13), they are taken to be about that number of the sets described—whether intentionally with **leu**, or exhaustively with **lea**—not about that number of the members within those sets. For talking about the members of sets you must first turn the set into a multiple; see Note 8. If fractions or proportions are used before set descriptions, as in (7) and (7.1), these are taken to indicate the fraction of the set described, and now the claims are about the individual members in that proportion of the set. In other words, the numbering conventions here are much like those of English.

8. So how do you talk about members of sets individually? First you convert a designation of that set—say **leu nema mrenu**—into a designation of the corresponding multiple: **le nema mrenu**. You can do this very easily, just change **leu** to **le**, or **lea** to **ra** (or vice versa when you want to go in the opposite direction). Then you can talk about the members of that multiple individually and still be talking about members of its "mother set". (They are, after all, the same individuals, just differently regarded.) For example, you can prefix a number to the description of the multiple you have just created, Then you will be talking about that number of members regarded individually, as in the example sentence.

By the way, quite independent of these numbering conventions, you can always shift from a multiple to a set description, or back again, simply by changing the descriptor. It is understood among Logli that you are still talking about that same group of individuals, although you are now treating them logically quite differently.

9. Suppose you want to talk about a couple of members of a set but as a new set, say as a pair of log-carriers. Loglan has a special suffix **-cu** that can be attached to any number—to the number **to**, in this case—that indicates that that number of individuals is to be regarded as a set. Such suffixed numbers still generate indefinite descriptions. For example, **Tocu mrenu pa tokna lemi pianfa.** *Some two men acting together took my piano*, might be a victim's report of the theft of his piano. When such an indefinite set-number is prefixed to a description of a multiple, as in the example sentence, it indicates that that number of individuals taken from that multiple are to be regarded as a set.

Notice that putting an indefinite set-number before a *set* descrip-

tion has a quite different effect. **Tocu leu nema mrenu** says that a pair of sets, each with a hundred men as members, are to be taken as doing something together—say a couple of villages having a tug-of-war.

10. This example is a variation on example (14). There, half of a hundred-man group came individually (**Pife leu nema mrenu pa kamla**)**.** Here, adding **-cu** to that **Pife** means that (some indefinite) half of that same hundred-man group also came, but now as a group.

Summing up what we have learned about togetherness and separateness so far, there four kinds of plural descriptions, two indefinite and two definite, and two of the four are of multiples (separateness) while two are of sets (togetherness):

11. Suffixing -**ra** to a number word (including the **ra** series itself) produces a *cardinal predicate*, that is, one referring to any group with that number of members. Thus, **tera** *is a threesome / trio*; **rara** *is an "allsome"* (a group composed of everything under discussion); **rora** *is a "manysome," multitude*; **rura** *is an "enoughsome"* (a group composed of enough people or things for some purpose). As always, the next-to-last syllable of these cardinal predicates is the one that is stressed: /**TE-ra**/, /**to-TE-ra**/, /**ne-to-TE-ra**/.

This use of the sound sequence /**ra**/ as a suffix doesn't create any ambiguities, because **ra** (*all*) is never used *after* numbers—unless a **lio** group ends with a number and is followed by an argument beginning with **ra**. But that's another reason for pausing after **lio** arguments.

12. When you use a number before one of these cardinal predicates, you have to pause between the number and that predicate in order to keep them apart. Without the pause, **le to, tera** (*the two trios*) would become **le totera** (*the group of twenty-three*).

13. Suffixing -**ri** to a number word (again, including the **ra** series) produces an *ordinal predicate*: **neri** *first*, **tori** *second*, **teri** *third*, etc. These are two-place predicates: *... is the nth member of series.* **Rari** *"allth"* refers to to the ultimate member of some series (the one at which you may say "That's all!"). Note also **Toi ruri!** *That is the "enoughth" remark!* (Properly speaking, this means *You've said just enough; anything more would be too much.* It doesn't mean

You've said too much already! **Tu pana zavmoutsu cutse!**)

14. Suffixing -**ro** to a number word (again, including the **ra** series) produces another kind of ordinal. It could be called the *quality predicate*: the kind we use in Loglan to say *The best* or *The second best* or *The worst*, etc, in some quality as assessed among some set of candidates. Like the cardinals and ordinals, the NI+**ro** words are also predicates. Interestingly enough, *The least interesting lesson* is **Le raro treci cirpai**, i.e. *The all-th or last most interesting lesson,* as opposed to being **Le nero je lopo treci jue le cirpai** *The number one in interest among the lessons.*

Summing up, three members of the **ra** series are also used as suffixes; each may be attached to any number NI. These suffixes (**-ra -ri -ro**) create numerical predicates: cardinals, ordinals, and quality ordinals. Another suffix (**-cu**) creates a class of indefinite set descriptors. Suffixed to the number **to** *two,* for example, these four suffixes produce:

-ra **tora** is a pair/doublet/dyad taken from set ...
-ri **tori** is the second member in series/sequence ...
-**ro** **toro** is second best/second most extreme in quality/ property ... among set ...
-cu **tocu** ... some indefinite two (of) ... regarded as a set.

15. **Lio netohei pio nefemeo** is all one big number. Just as you may say *Twelve hours* plus *fifteen minutes*, so you may say **Lio netohei *nio* nefemeo** *Twelve hours* less *fifteen minutes*—a quarter to twelve, in other words. In the next note, we examine another way to subtract minutes from an hour.

16. *Negative fifteen minutes plus thirteen hours*—fifteen minutes until one PM (twelve forty-five in the afternoon). Notice that Logli distinguish between the kind of minus sign that is used to mark negative numbers, as in **-2**. This sign is spoken as the word **nea** *minus*. However, when the same character is used as the sign of subtraction, as in **5 - 2**, the Loglan word for it is **nio** *less.*

In math texts, where everything is symbolic, the difference between the minus sign '-' that means **nea** and the one that means **nio** is generally shown by the absence of a following space in the case of **nea** (**-2**), and the presence of one in the case of **nio** (**5 - 2**). Reading

such expressions aloud in Loglan makes the difference plain: **Nea to** vs. **Fe nio to** is /**ne-A-to**/ vs. /**fe-NIO-to**/. The same vowel pairs distinguish **pea** *positive* and **pio** *plus*, the sign of addition.

Lopo Purmao

Ra and **ro** have their own djifoa, made as usual by adding -**r**: **rar-, ror**-.

Last time I said that there were important uses for the digit djifoa. These are the predicates for the months of the year and the days of the week, using -**mea** (**mensa**, *month*) and -**dei** (**denli**, *day*), respectively:

nermea ... is a/the january/first month of year ...
tormea ... is a/the february/second month of year ...
termea ... is a/the march/third month of year ...
formea ... is a/the april/fourth month of year ...
fermea ... is a/the may/fifth month of year ...
sormea ... is a/the june/sixth month of year ...
sermea ... is a/the july/seventh month of year ...
vormea ... is a/the august/eighth month of year ...
vermea ... is a/the september/ninth month of year ...
nernirmea ... is a/the october/tenth month of year ...
nernermea... is a/the november/eleventh month of year ...
nertormea ... is a/the december/twelfth month of year ...

My not capitalizing the English names of the months was done to make a point. In Loglan, only names as such are capitalized. Predicates and descriptions (**nermei** *is a january,* **le nermei** *the january in question*) are not. If you want to single out the *local* january, the january of the current year, then name it. Use **la** and capitalize the predicate: **la Nermei**. This is the equivalent of English *January* when used without an article.

nerdei ... is a/the monday/first day of week/month ...
tordei ... is a/the tuesday/second day of week/month ...
terdei ... is a/the wednesday/third day of week/month ...
fordei ... is a/the thursday/fourth day of week/month ...
ferdei ... is a/the friday/fifth day of week/month ...
sordei ... is a/the saturday/sixth day of week/month ...
serdei ... is a/the sunday/seventh day of week/month ...

Again, **la Serdei** means *Sunday,* the local sunday, the sunday of the current week.

Lo Nurvia Logla

Vi le tursia pe la Betis

Hue Dai: Loi, Betis. I ue lo tidjo!
Hue Bai: Kou tio mi plizo levi tovylufta. I no nu fatru. I no, le motci fa felda.
Moihu tu hijra? I ei tu danza lepo helba mi lepo fanbalci?
Hue Dai: No. I ia tu pa djacue lepo le parti ga junti. Ibuo pei laldo simci.
Hue Bai: Pei nurpli cenoi ckemo laldo. Ibea le motci na nirne lio te.
Hue Dai: Nusoa li, Le tcaro ga nirne ho?, lu nardu kenti.
Hue Bai: Ia. Ibuo mi kanmo lepo lalcue ra parti tu. Ibea, le konce ga nirne lio tove.
Hue Dai: Tu tcabapra go melkukra ho?
Hue Bai: Ue! I ei tu polsi?
Hue Dai: Rea no. Ifeu, mi godzi tu moi lepo djadou tu lepo la Odris djacue lepo to djipo fa fomtaa vi le ckela.
Hue Bai: Ie to djipo?
Hue Dai: Le to djipo ga mela Fudjitsus. I ei lena namci ga cninu *tu*, sui? I leu to djipo ga ponji merji tora, e fu bukcu lea logla go ponja clika.
Hue Bai: Nahu deo fomtaa?
Hue Dai: Na la *Neserin*, io. Nai sordei.
Hue Bai: Soi fatcou.
Uo lo fu hirti!
Na la *Horin*, gea?
Hue Dai: Ue lo damlogla!
Ae tu no takna la *Karl,* lia!
Hue Bai: Ceu.
Hue Dai: Ceu na la Neserin.
Hue Bai: Hu fa jolkeo lepo fomtaa?
Hue Dai: Lio nevepifehei.
Hue Bai: *Mi* ai hijra! I la Turcefli no porli lo sordei.

Hue Dai: Oe ii hijkinbeo Tai. Isii Tai fui djacea la Loglan.
Hue Bai: Ue! I mi na djano leTai retpi. I rei fa meli, Na la Nirin pe la *Nirmea* ! lu.

Lo Kenti

1. Hu nardu kenti?
2. Moihu Dai pa godzi Bai?
3. Leu to mela Fudjitsus he?
4. I ie ne le to mela Fudjitsus dui? (Tedji penso!)

Lona Cninu Purda

Predicates

Word	*Definition*	*Clue words*
fanbalci	... "tears down"/disassembles mechanism ... (auto mechanic's term)	[**FANve BALCI** = reverse -build]
damlogla	... is an instance of "low"/slang Loglan (Logslang)	[**DAMni LOGLA** = low-Loglan]
djacea	... learns/becomes knowledgeable about ... from ...	[**DJAno CEnjA** = know-become]
hijkinbeo	... invites ... to go with him/her to ...	[**HIJra KINci BEgcO** = attend-accompany-request]
hirti	... hear ... over background noise ...	(*hear* [**HIR**])
kanmo	... is able to [do] ... under conditions ...	(*can* [**KaN**])
lalcue	... tells/gives the age of ... to ...	[**LALdo CUtsE** = old-say]
lufta	... lifts ... to ... from ... in gravity-field ...	(*lift* [**LiFT**])
melkukra	... has a measured speed of ...	[**MErLi KUKRA** = measure-quick]
merji	... is married to ...	(*marry* [**MERI**])
murku	... is a monkey, a small arboreal primate.	(*monkey* [**MynKi**])
nirne	... lasts ... years/is ... years old (default 1)	(*year* [**iIR**])
nurpli	... is used by ... for purpose ...	[**NU**(**R**) **PLIzo** = 1st passive-use (used)]
polsi	... is a police officer/works for the police of area ...	(*police* [**POLI/S**] — the last two sounds are reversed)
porli	... has power/is lord over ...	(*power* [**PaOR**]; *lordly* [**lORdLI**])
sordei	... is the sunday/seventh day of week ...	[**SO**(**R**) **DEnlI** = seven(th)-day]

tursia ... is a/the shop/workplace of ... for work ...
[**TURka SItfA** = work-place]
zavmoutsu ... is too much/an excessive amount of ...
[**ZAVlo MOrdU TSUfi** = bad-more(than)-sufficient]

Little Words

nio less, minus [-], the sign of subtraction; cf. **nea** *negative.*
pea positive [+], the sign of a positive number; cf. **pio** *plus*.

Usages

Na la Nirin pe la Nirmea Never in a million years ["On the Zeroth day of the Zero Month"]

Summary: Lesson 13

1. The **ra**-series is a group of words which may be used just like regular numbers. They can't be combined with numbers, however.

2. When a **ra**-word is used before a **lea** or **leu** description, the Little Word **pi** (*decimal point*) must be prefixed to it to acknowledge that you're talking about only a part of that set.

3. **Sa-**words modify numbers (including **ra**-words). When used alone, they act as abbreviations: **sa**[**ra**] *almost all of*, **si**[**ne**] *at most one of*, and **su**[**ne**] *at least one of.*

4. Used as a suffix, -**ra** changes a number word into a two-place predicate describing a group with that number of members: **tera** *is a trio / threesome of ...*; **rora** *is a "manysome" / multitude of ...* (**Sa**-words do not take this suffix, though they may be attached to a word that does, as **sitera** *is a group of at most three members*.) The second place of a -**ra** predicate is often left empty; but may be filled with a designation of any superset from which that set is taken: **Ne fora je lea murku** *A quartet of monkeys*, **Ne fora je lea primatu** *A quartet of primates,* and **Ne fora je lea mamlu** *A quartet of mammals* are all ways of designating the same foursome of monkeys.

5. Suffixing -**ri** to a number word produces a two-place predicate with the structure *... is the* [number]*th member of series ...*: **teri** *is the third* [*member*] *of* [*group*] ... . (**Sa**-words do not use this suffix, either.)

6. To avoid confusion (especially where -**ra** and -**ri** predicates are concerned), always pause after a number word you want to keep

separate from them.

7. -**ro** used as a suffix creates a three-place predicate marking the positions of a group of candidates on some value scale. **Ti toro lopu fu vidju lea kruma je levi hotle** *This is the second best, as to the views from them, of the rooms in this hotel.*

Lo Cninu Purda

Predicates

Word	*Definition*	*Clue words*
hotle	... is a hotel of community ...	(*hotel* [**HOTeL**])
kruma	... is a room of structure/building ...	(*room* [**kRUMa**])
mamlu	... is a mammal of genus ...	(*mammal* [**MAMyL**])
murku	... is a monkey, a small arboreal primate.	(*monkey* [**MynKi**])
primatu	... is a primate, one of an order of mammals, including monkeys, apes and humans.	(*primate* [**PRaIMeiT**])
vidju	... is a prospect/view/sight/scene of ... from ...	(view [**VIU**])

Little Words

Soaki ... ki ... Since (Given premise) ..., then ... (follows). Logical entailment.

Lopo Notlensea Cirduo

1.	**Lea cirpai je levi bukcu ga nesora.**	The (set of all the) lessons in this book are a "sixteensome."
2.	**Tu na ridle ne, reri cirpai.**	You're now reading a "most-th" lesson; (You're more than half-way through;)
3.	**isoa tu napa ridle pire cei.**	[and] because you have read most of them (the lessons).
4.	**Isoaki ti neteri cirpai, ki sui tu napa ridle sa cei.**	[And] Since this is the thirteenth lesson, (it) also (follows that) you have read almost all of them (of the lessons in this book).

Lesson 14: Just Say No

Lo Mipli Steti

1. **No,[1] la Meris pa godzi la Pari's la Cikagos.**
   It is not the case that Mary went to Paris from Chicago.
2. **No[2] la *Meris* pa godzi la Pari's la Cikagos.**
   It was not *Mary* who went to Paris from Chicago, but someone else.
3. **La Meris no[3] pa tcaro godzi la Pari's la Cikagos.**
   Mary did not go to Paris from Chicago by car.
4. **La Meris pa no[4] *tcaro* godzi la Pari's la Cikagos.**
   Mary didn't go to Paris from Chicago by *car*.
   (She went some other way.)
5. **La Meris no pa godzi ba[5] la Cikagos.**
   Mary didn't go somewhere from Chicago.
6. **La Meris no pa godzi raba[6] la Cikagos.**
   Mary didn't go anywhere from Chicago.
7. **La Meris pa godzi la Romas no[7] la *Pari's*.**
   Mary went to Rome not from *Paris*.
   Mary went to Rome alright, not from *Paris* but from somewhere else.
8. **Ti no corta raba.[8]**
   This is not-shorter-than anything.
   This is as long as the longest thing there is.
9. **No, ti corta ba.[8]**
   It's not the case that this is shorter than something.
10. **No,[9] ba breba vi la Espanias.**
    It is not the case that something is bread in Spain.
    There is no bread in Spain.
11. **Raba no[9] *breba* vi la Espanias.**
    Everything is non-*bread* in Spain..
    There is no *bread* in Spain.
12. **Mi no[10] farfu raba no[10] *tu*.**
    I am not the father of anyone not through*you*.
    I have not fathered any child of whom *you* are not the mother.

13. **La Karl pa godzi no**[11] **la *Espanias* no**[11] **la *Frans*.**
Karl went not to *Spain*, not from *France*.
Karl went to someplace that wasn't *Spain* from someplace that wasn't *France*.

Lopo Lengu Klimao

In this lesson, we'll look at how the word **no** is used. It differs considerably from English, but the rules for handling it are both simple and brief.

Notes:

1. Putting **no** plus a pause-comma in front of a sentence makes the sentence negative. Using **no** in this sentence-negating position is preferred for a number of reasons, including the simple fact that it lets your audience know immediately that you're denying something. The pause-comma separates **No** from the rest of the sentence. This allows us to make a distinction between this example and the same sentence without a comma, as in the next example.

2. If there is no comma, **no** negates just the structure that follows it, in this case the argument **la *Meris***. So this sentence underlines the fact that it was *Mary* who didn't go, with the implication that someone else did go.

3. Putting **no** before an inflector negates the entire predicate expression. Notice how this differs from the next sentence.

4. Putting **no** before a predicate word negates just that word. It also emphasizes it. In this case, Mary's a "non-*car* goer": Presumably she went, but not by car. We could also negate the other word in this pair and say **Mai pa tcaro no *godzi*** . She did something with a car (washed or sold it, perhaps), but didn't travel in it. Putting an inflector between **no** and a predicate, as in 3, removes the emphasizing effect of negation.

5. I said in Lesson 1 that you can fill in an empty blank with **ba**, but apparently that doesn't work when the predicate is negative. The sentence says that Mary didn't go "somewhere" from Chicago—but that's almost certainly true! However many places she may have gone to from Chicago, there's probably at least one place she didn't go; in fact, there are probably billions of places she didn't go. So this

sentence is what logicians call trivially true, and that means pretty close to useless. Let's see how the blanks of negated predicates *should* be filled in.

6. In this sentence I've changed **ba** to **raba**, turning what logicians call an existential claim—a claim that something with some property exists—into a universal one: a claim that all instances of something have some property. Making sensible assumptions about negative predicates requires that universal non-designators—expressions like **raba**, **rabe**, **rabo**, etc. be used to fill their blanks. Note that when these universals accompany a negative predicate they are translated *any-*, not *every-*.

By the way, example 6 does not mean that Mary didn't go *everywhere* from Chicago! To say that—which would be another trivial truth—you would have to export the negative to the head of the sentence. This turns the predicate into a positive one, and with that positive predicate you can now say this absurd thing: **No, la Meris pa godzi raba la Cikagos** *It is not the case that Mary went everywhere from Chicago*. Replacing **raba** with **ba** in this second sentence suddenly makes it sensible again: **No, la Meris pa godzi ba la Cikagos** *It is not the case that Mary went somewhere from Chicago*.

In fact that's a hard and fast rule. Whenever you move a negative from a predicate to the sentence itself, you must change the logical type of all the non-designating variables in it—change **ba** to **raba** or **raba** to **ba**—if you want to preserve its meaning. The same thing happens the other way round. If you want to move a negative from the sentence-head to the predicate, you must also change the type of all its non-designators. N**o, la Djan farfu ba be** *It is not the case that John is the father of someone by someone* becomes **La Djan no farfu raba rabe** *John is not the father of anyone by anyone.* This is a *logical* rule—something that holds in any language—English, Loglan, or Swahili. In Loglan the rule is easier to see and use; but the rule itself is universal.

7. As we've seen, Loglan allows the negation of sutori arguments as well as first ones, and in that way you can emphasize them. But logically, the claim of a sentence with a negative argument and a positive predicate is the same as the two claims made by a pair of

sentences involving **ba** (or **be**, etc., if **ba**, etc., are being used). First put **ba** in place of the negative argument in the basic sentence. Then add a second sentence saying that **ba** is not whatever is designated by that argument. Here's the equivalent pair for sentence 7: **La Meris pa godzi la Romas ba. I ba nobi la Pari's.** ***Mary went to Rome from somewhere x. And x is not Paris.***

8. If a sentence has no negative arguments in it, it can be "reversed". To reverse a sentence, we simply change the sign of both the sentence and its predicate and the type(s) of any non-designator(s) in it. Thus 8 and 9 are "reverses" of one another. They claim exactly the same thing. When a sentence is full of negatives, it's often useful to reverse it, for that will often reduce the number of negatives; and that will always help you understand what it means. Suppose someone says to you **No, la Djan no pa godzi raba la Romas rabe** *It is not the case that John did not go anywhere from Rome by any route.* You can de-mystify this sentence completely by simply changing all of its signs and types. The result is **La Djan pa godzi ba la Romas be** *John went somewhere from Rome by some route.* This makes exactly the same claims and is orders of magnitude easier to understand. Humans find negatives difficult to think about. Getting rid of them, or just reducing their number, is nearly always worth doing.

9. Examples 10 and 11 form another pair of sentences that are reverses of one another. Notice that reversal does not affect the designative features of an utterance. **Vi la Espanias** stays the same.

10. Remember how your English teacher griped about double negatives? Well, in Loglan they're often acceptable. This example shows what *can* be done in Loglan, and you can learn elsewhere the detailed rules governing this kind of sentence. However at this stage we want to keep things simple, so you'd do best to avoid using negative arguments in a sentence that is already itself negated.

11. Karl went someplace, alright, but it wasn't Spain and he didn't go there from France. The unwinding of this sentence yields three claims: K went to x from y; and x wasn't Spain; and y wasn't France.

Lopo Purmao

No is another Little Word which adds -**r** to create a djifoa. As such, it negates the meaning of the next predicate djifoa, thus

norvia ... is blind to/overlooks ... in situation ...
[**NO**(**R**) **VIzkA** = no-see]
nornurvia ... is unseen/invisible to ... under conditions ...
[**NO**(**R**) **NU**(**R**) **VIzkA** = not-seen]

Nor- and **nur-** are not the only "negative" djifoa.

Fan- [**fanve** *reverse*] is sometimes prefixed to a word to reverse the steps in some action or process, as in **fanbalci** (*unbuild"/take apart*), which was used in the preceding lesson, or as in **fanrespli** (*undress*). **Fan-** often has the force of English ***un***-.

Buf- [**bufpo** *opposite*] is often prefixed to a quality word to form the opposite sense of that quality, as in **bufklini** (*unclean/dirty*) and **bufrii** (*irregular*). **Buf-** is often translated by English *un-, in-,* or *ir-*.

-**Cle** [**clesi** *without*] is often used as a suffix much as English *-less* is used. Examples are **ckacle** (*thoughtless/inconsiderate/without kindness*) and **comcle** (*shameless*).

-**Pozfa** [**pozfa** *oppose*] is frequently used as a suffix, when it means about the same thing as English *anti-* does as a prefix. Examples are **lidpozfa** (*antireligious*). **sesypozfa** (*antiscientific*), **venpozfa** (*antivenum*). Less frequently, **poz-** is used as a prefix: **poztaa** (*speak against*) and **poztai** (*stand against/confront*).

Note that the elements of the English metaphors are, in all these **pozfa** cases, spoken in the reverse order from those of the corresponding Loglan metaphor: **lidpozfa** = **lidji pozfa** = *religion-antagonist* vs. *antireligious*; **poztai** = **pozfa stali** = *against-stand* vs. *stand against/confront.* This is because Loglan observes a strict modifier-modified word-order in all its metaphors and English doesn't.

Sometimes it's hard to tell which of these negative forms to use. Consider *unscientific.* Does it mean **norsensi** (properly *nonscientific*, though some confuse the two), **sesycle** (*lacking scientific basis*), **bufsensi** (*opposite in quality from science, superstitious*), or **sesypozfa** (*antiscientific, antagonistic to science*)? Don't blindly fol-

low definitions in dictionaries. Try to discover and translate the thought, not the word.

Lo Nurvia Logla

Peu la Karl ce la Odris

Hue Dai: Loi, Karl. I ei tu fa hijra lepo la Fudjitsus fomtaa?

Hue Kai: Iu. I feu, soi smicue, mi roirtao la Odris, inukou no, mi komfu lopo hijra ba vi leOma ckela.

Hue Dai: Hu fu roirtao?

Hue Kai: Lo dreti dicfoa. I lo meaOma suna norloglo, a stari sirto logpozfa.

Hue Dai: Ei ue?

Hue Kai: Oma fundi lopo durcia, e lo danri po takna. I Oma gudbi ditca, inukou roba vi logla takna. Ibuo siriba logla penso, a sira speni lo lodji. I lopo lodji penso ga basni la Loglan.

Hue Dai: Lo no meala Karl rina dreti. I Oma ditca lopo lodpeo tie lopo lenple. I lepo Oma sacdou la Logckel ga nu modvi lopo Oma danza lopo logdia. Ifeu Oma ditca la Loglan sa levi logli.

Hue Kai: Ibuo lozo lei fekto logli ga he? I Oma pebtoa la Loglan. I Lai oa rana spebi cenoi norma lengu.

Hue Dai: Li, Roba logli. I robe modvi kao ba, lu. I tu dridja toi, ei? I io no, ra logli ga nu treci lo lodji.

Hue Kai: Buo ba oa siodja lo lodji, anoi la Loglan.

Hue Dai: Ii. Ibuo ba spopa lepo lopo leudja la Loglan fa ckozu lopo siodja.
Ae raba fa siodja ke la Loglan ki lo lodji.
Buo io pa tio ba fa leudja Lai.
Tu cia nepa djacue lepo, peu lo mathe, ba rona pakcia lo durfoa, lo raznu ca furpli.

Hue Kai: I ei Oma ditca si lo durfoa? I tu siorcia hu, na?

Hue Dai: Lo mealiu no.

Hue Kai: Cutse le nomfoa je li, No, ba donsu rabe no *la Pidr*, lu, eo.

Hue Dai, fa nepo pensai: Li, Raba donsu be la Pidr, lu.

Hue Kai: Lo dreti! I ui tu plizo lo nurcuesaa.
Ai mi hijra. I ae mi vu jmite su notbi logli.

Lo Kenti

1. Ei Kai pa danza na le satci lepo hijra lepo fomtaa? Kouhu?
2. Coi Kai, lo meOma dicfoa ga he?
3. Ei lo fu ditca je Oma ga logli?
4. Coi tu, ei lo logli ga siodja, oa, lo lodji?
5. Ei Oma ditca lo durfoa?

Lona Cninu Purda

Predicates

Word	*Definition*	*Clue words*
basni	... is the base/basis/foundation of ...	(*basis* [**BeiSIs**])
breba	... is a piece/loaf of bread/is made of bread	(*bread* [**BREd**])
dicfoa	... is a teaching method of/used by ... in class/situation ...	[**DItCa FOrmA** = teach-form]
dreti	... is right/correct according to (rules) ...	(*right* [**RaiT**])
dridja	... is familiar/acquainted with ...	[**DRIki DJAno** = remember-know]
durcia	... practices/learns ... by doing it	[**DURzo CIrnA** = do-learn]
durfoa	... is a method of/procedure for doing ... to ... under conditions ...	[**DURzo FOrmA** = do-form]
lenpli	... uses language ... in situation ...	[**LENgu PLIzo** = language-use]
lodpeo	... thinks logically about ...	[**LODji PEnsO** = logic-think]
logdia	... teaches Loglan to ...	[**LOGla DItcA** = Loglan-teach]
logpozfa	... is anti-Loglandic, contrary to the spirit of Loglan, in feature ...	[**LOGla POZFA** = Loglan-oppose]
mathe	... is a mathematical method/procedure for deriving ... from ... (or relating ... to ...)	(Sp. *matemática* [**MATEmatika**])
modvi	... is a motive for ... to do ... under conditions ...	(*motive* [**MOt(i)V**])
nomfoa	... is the normal/typical form of expression ... under/within system ...	[**NOrMa FOrmA** = normal-form]
norlogla	... is a non-Loglandic feature of/in language ...	[**NO(R) LOGLA** = non-Loglan]

norma ... is a normal/average/typical [instance] of ...
(*normal* [**NORMl**])

nurcuesaa ... is a quotation mark delimiting quoted passage/item ...
[**NU**(**R**) **CUtsE SAnpA** = said-sign]

pakcia ... learns ... before [learning] ...
[**PAsKo CIrnA** = before-learn]

pebtoa ... "despecializes"/makes ... just like any other thing of the same type by doing ...
[**sPEBi TOknA** = special-take]

pensai ... is pensive/thoughtfully silent
[**PENso SAntI** = think-silent]

raznu ... is a reason for ... to do ... under conditions ...
(*reason* [**RiZN**]; Sp. *razón* [**RAsóN**])

roirtao ... quarrels with ... over/about ...
[**gROcI** (**R**) **TArgO** = angrily-argue]

sacdou ... founds ... [**SAtCi DOnsU** = beginning-give]

satci ... is the start/source/root/origin of ... (*start* [**StArt**)]

smicue ... confides/tells secret ... to ...
[**SMIke CUtsE** = secretly-say]

(as in **soi smicue** *confidentially, just between you and me.*)

spebi ... is special/specific/peculiar to ... among ...
(*special* [**SPEcl**])

siorcia ... systematically learns ... from ...
[**SIstO** (**R**) **CIrnA** = system-learn]

sira ... is a set consisting of zero or one member(s).
[**SI + RA**]

Adverbially, **sira** means *even* in the sense of *at most* or *as much as*, as in **Riba sira speni da** *Few even experience* .

Little Words

dau probably, in the objective sense; cf. **io** for the subjective sense; from **dakli** *likely* (PA)

nobi is not identical to; from **no**+**bi** *not+identical to* (BI)

peu about, concerning (PA)

tie with/by means of, as of a tool or means; from **trime** *tool* (PA)

Summary: Lesson 14

1. Loglan **no** is commonly used in four places: (i) immediately before a predicate word, where it negates and emphasizes just that word: **Ta no *fleti* nirda** *That's a non-*flying *bird.* (ii) before the inflector of a predicate, where it negates the whole predicate: **La Meris no pa fleti la Romas** *Mary didn't fly to Rome*; (iii) before a designative argument, where it negates and emphasizes that argument: **Mai pa fleti no *Rai*** *M flew (but) not to* R *(Rome)*; and (iv) before a sentence and followed by a pause-comma, where it negates the whole sentence: **No, Mai pa fleti Rai** *It is not the case that M flew to R.* In general, Logli prefer the fourth position, where **no** is easier to manipulate.

2. It is always reasonable to assume that the unfilled blanks in sentences with positive predicates can be filled by "existential" non-designating variables. Thus **Mai pa fleti Rai** probably means **Mai pa fleti Rai ba be**. This is true even if the sentence itself is negative: **No, Mai pa fleti Rai ba be** *It is not the case that M flew to R from somewhere by some route.* But the empty blanks in sentences with negative predicates must be filled with "universal" non-designators if you assume the speaker is not speaking nonsense: **Mai no pa fleti Rai raba rabe** *M didn't fly to R from anywhere by any route.* The second form is logically more obscure, and it is certainly more different from the positive form of the sentence; so this is a second reason why Logli tend to prefer sentence negatives over predicate ones.

3. The **no**'s in a Loglan sentence may be moved about, or even eliminated, by applying either or both of two rules:

Rule 1. Any designative argument with a **no** in front of it may be replaced by an existential non-designator (**ba**, **be**, etc.), if the predicate is positive, or by a universal non-designator (**raba**, **rabe**, etc.), if the predicate is negative, provided a second sentence or clause is then appended in which the non-designating variable is said not to be identical to the argument negated. Thus **Mai pa fleti no la *Brasi'l*** is just another way of saying **Mai pa fleti ba. I ba nobi la Brasi'l**, while **Mai no pa fleti no la *Brasi'l*** is equivalent to **Mai no pa fleti raba. I ba nobi la Brasi'l**.

Rule 2. Once a sentence has been cleared of negative arguments—

which can always be done by repeated applications of Rule 1—it may then be "reversed". Reversing a sentence means changing the sign of both the sentence and its predicate as well as the logical types of all its non-designators. Thus **Mai no godzi raba rabe rabo** is just another way of saying **No, Mai godzi ba be bo**. The two forms are said to be "reverses" of one another.

Lopo Notlensea Cirduo

1.	No, mi pa donsu tu ta.	It's not true that I gave you that.
2.	No *mi* pa donsu tu ta.	*I* wasn't the one who gave you that.
3.	Mi no pa donsu tu ta.	I didn't give you that.
4.	Mi pa no *donsu* tu ta.	I didn't *give* you that. (Perhaps I loaned it to you.)
5.	Mi pa donsu no *tu* ta.	I didn't give *you* that. (Perhaps I gave it to someone else.)
6.	Mi pa donsu tu no *ta*.	I didn't give you *that*. (Perhaps I gave you something else.)

Lesson 15: Broadening Your Scope

Lo Mipli Steti

Note: The translations given aren't absolutely literal; close translations would be too long and involved, obscuring more than they explained.

1. **Raba danza be.**
   Everyone wants something.
2. **Be nu danza raba.**[1]
   Something (a certain thing) is wanted by everyone.
   Everyone wants the same thing.
3. **Raba be goi[2], ba danza be.**
   For every x there is a y such that x wants y.
4. **Raba be goi, be nu danza ba.**[3]
   For every x there is a y such that y is wanted by x.
5. **Ba no be[4] goi, ba fleti be.**
   There is an x such that there is no y such that x flies to y.
6. **No ba be[5] goi, ba fleti be.**
   There is no x such that there is a y such that x flies to y.
7. **Ra normermeu ga normerji.**[6]
   All bachelors are unmarried.
8. **Raba goi, ba normermeu, noa normerji.**[7]
   For every x, x is a bachelor only if (x is) unmarried.
9. **Raba goi, ba kanoi normermeu ki normerji.**[8]
   For every x, x is, if a bachelor, then unmarried.
10. **Raba kanoi ba normermeu ki ba normerji.**[9]
    For every x, if x is a bachelor then x is unmarried.
11. **Raba kanoi ba normermeu ki ba normerji, e mendi.**[10]
    For every x, if x is a bachelor then x is unmarried and a male.
12. **Raba kanoi ba normermeu ki ba normerji, e mendi, e kalroa.**[11]
    For every x, if x is a bachelor then x is unmarried, a male, and an adult.
13. **Raba kanoi ba normermeu ki ba normerji, e mendi, e kalroa, e humnu.**[12]

For every x, if x is a bachelor then x is unmarried, a male, an adult, and a human.

14. **Raba ko ba normermeu ki ba normerji, e humno, e kalroa.**[13]
For every x, if and only if x is a bachelor, then x is unmarried, a human male, and an adult.
For any x, that x is a bachelor means that x is unmarried, a human male, and an adult.

Lona Cninu Purda

Little Words

goi (Marks right end of a quantifier string; see Notes.)

Lopo Lengu Klimao

The preceding lesson introduced some peculiarities of the non-designating variables; in this lesson we'll conclude this topic by examining the wonders of quantification and its scope.

Notes:

1. Oops! Apparently conversion doesn't always work. Examples 1 and 2 obviously don't mean the same thing. So before you switch things around, you must look at all the non-designating variables—including the implied ones that would fill the predicate's unfilled blanks. If there is just one or none of these—explicit or implied—go right ahead and convert the predicate. **La Meris pa donsu raba la Bab** (*Mary gave everything to Bob*) converts successfully into **Raba pa nu donsu la Meris la Bab** (*Everything was given by Mary to Bob*). But if there is more than one, see whether they're identical in type and sign. If they are, again there's no problem. It's only when you have different types—existential (**ba**) versus universal (**raba**), and/or positive (**ba**) versus negative (**no ba**)—that you must not convert the predicate. Let's see why.

Each non-designating variable limits those which follow it. **Raba danza be** is the equivalent of saying *This x wants something y*, and saying it for every x (but not, notice, for every y). So this is not the same thing as saying *Something y is wanted by every x* (**Be nu danza raba**). It isn't even quite the same thing as **Rabe nu danza ba** (*Everything y is wanted by someone x*). There could be a y that no x wants, even though every x wants some y. So to preserve the mean-

ing of any quantified claim, you've got to preserve the order, type, and sign (positive or negative) of the quantifiers that adorn that claim.

2. Loglan has a "such that" operator. It's the little word **goi**, and it allows Logli to make their quantifiers explicit. To use it, you just copy all the quantified arguments you find in the sentence to the head of the sentence. The string of arguments so formed is called the "quantifier string"; if the string is attached to a single sentence, **goi** is used to mark the end of it. Once you've copied the quantified arguments and their negatives, if any, into the quantifier string, you can omit the quantifiers and the negatives from those same arguments in the main sentence. **Le ri mrenu pa takna raba no be** (*Each of the several men (I'm thinking about) talked to everyone about nothing.*) would become **Ra le ri mrenu raba no be goi, le ri mrenu** [or just **mei**] **pa takna ba be.**

Did you notice something strange? That's right. When **Le ri mrenu** went into the quantifier string, it suddenly acquired the quantifier **Ra**. The **ra** was there all the time, of course, but implicit. On any plural description made with **le** (or with English *the*, for that matter), **ra** (or *each of*) are implicit. They are regularly assumed; they don't have to be mentioned. But in a *quantifier* string, the logical type of each quantifier *must* be mentioned.

3. As you no doubt have realized, prepending a quantifier string to a sentence turns all the non-designating arguments in it into **ba**-type variables: positive existentials. And since they are all of the same type and sign, you can *now* convert the predicate any way you want. Sentences 3 and 4 actually do make the same claim. For now the quantifier string is preserving the order, type, and sign of each argument; and the quantifier strings of these two sentences are identical.

4. Presto! All the mystery we once thought surrounded **Ba fleti no be** in Lesson 14 (*Someone flies (but) not to somewhere* (!?!)) has disappeared. Once we pull out its quantifier string and put that string at the head of a stripped-down version of this sentence—which is what we have in example 5—the claim that **Ba fleti no be** is really making, though complicated, is no longer obscure. To test its truth we are to see if there exists an x such that we will find no y such

that that x ever flies to it. If a non-flying x exists, that will be true; or if a flying x exists but goes nowhere y by its flying, the claim will also be true. Otherwise the claim is false. Obviously it is trivially true; for plenty of non-flying things—like earthworms and battleships—do exist.

The English phrase by which this puzzling claim is clarified, namely *There is an x such that there is no y such that ...,* is couched in some strange English usages that were adopted by19th Century English logicians in their search for utter clarity. But nobody—except logicians in their classrooms—actually speaks that way in English. The equivalent Loglan phrase, **Ba no be goi ...**, is only about one-fourth as long. (It has 12 textual characters compared to 47; 9 phonemes compared to 34.) But it works just as well to clarify this quantified claim. Thus Logli have to expend only about 25% of the effort to get the same clarity as logicians do with their more awkward ways of speaking quantifier strings. Therefore perfectly ordinary Logli will tend to use these clarifying phrases in speech much more frequently than even logically-trained English speakers do. And this will help Logli not only to say what they mean but also to understand what they themselves say.

5. Notice what happens if, by misapplying one of the rules of the previous lesson, you simply exported the **no** in the once-mysterious **Ba fleti no be** to its head. You would get *__No, ba fleti be__ (since this is an illegitimate move, I'm starring its result). If, now, we pull the quantifier string out of this illegitimate form, we get *__No ba be goi, ba fleti be__. From it we see immediately that there is a huge difference between the claim of this incorrectly deduced sentence and that of the correctly deduced sentence 5. We have seen that sentence 5 is trivially true; it claims that there are either non-fliers or things that fly but fly nowhere. The incorrect sentence 6 is equally trivially false. It claims that there are no x,y pairs such that x flies to y. As there are both butterflies and jet airliners—some of which actually get somewhere—to claim that there are none is to state a trivial falshood. Therefore, exporting the **no** in **Ba fleti no be** *must* have been the wrong thing to do!

It is *always* the wrong thing to do. That's why Logli do not export the negatives that happen to end up on non-designating arguments.

Instead, they make the quantifiers hidden in such claims "explicit"—that is, they "explicitate" them—by pulling out their quantifier strings and putting them at the heads of the stripped-down sentences—exactly as we did to get example 5. Thus example 5 is the "explicitation" of **Ba fleti no be**, and example 6 is the explicitation of **No ba fleti be**. That they mean vastly different things is now obvious. It evidently makes a difference where that **no** comes in the quantifier string.

6. In addition to helping us clarify our claims, an important use for quantifier strings is in helping us define new words. Suppose we want to introduce a word for *bachelor* into Loglan. The metaphor we decide on is **normerji mrenu** (*unmarried man*), and from this we derive **normermeu** as our new word. Our first attempt to tell another Logli in Loglan what this new word means might be example 7. But this isn't good enough. It tells us something *about* bachelors, alright, namely that they're all unmarried; that's not enough to be sure we've got one. Many other things are unmarried, for example butterflies and battleships and there's not a bachelor among them. Obviously, a definition—if it's a good one—must go both ways. Everything true of the "definiendum" (the thing being defined) must also be true of the "definiens" (the defining thing). And vice versa.

7. Example 8 is our second attempt at defining **normermeu**. Here we've used explicit quantification in the hope that that will help. It helps, but it's not enough. Sentence 8 says that if someone is a bachelor, then that someone is unmarried, and that this is true for every someone. Let's say that directly, by using a kek instead of an ek.

8. In sentence 9, we've kekked the predicates that were previously ekked. We'll make use of that move in the next transformation.

9. Notice that in changing 9 into 10, we've dropped the **goi**! Evidently the kek plays the same role as **goi**. **Kanoi** terminates the quantifier string just as **goi** does and, moreover, it stretches the scope of that string over what are now two sentences: **ba normermeu** and **ba normerji**. This is the improvement we're looking for. It turns out we'll need this feature for our definition.

10. We now have two sentences over which the effect of the quantifier **Raba** extends: **ba normermeu**, the definiendum, and **ba**

normerji, the definiens. To the latter we can now add a second qualification for bachelorhood: being male. By adding **e mendi** (*and male*) to the definiens, we can at least eliminate the female butterflies. But it's not enough. Both male butterflies and little boys are unmarried and male, and still not bachelors.

11. We can chop out the little boys, at least, by adding **e kalroa** (*and adult*). But we still have those adult, male—and woefully unmarried—butterflies to contend with.

12. In 13 we nearly have it. By adding **e humnu** (*and is human*) we eliminate the butterflies—and the lions and giraffes. We can now think of nothing that could be characterized by the definiens that is not also a proper bachelor. So we are about ready to replace the conditional connection **kanoi...ki...** (*if...then...*) with the biconditional **ko...ki...** (*if and only if...then...*), for at last we've got the inference running both ways.

Note:
In Lesson 7 we encountered the ethnic predicates, in which the final vowel shows which aspect of nationality we mean. Something similar happens with "animal predicates". Here there are five categories:

- **humnu** is a generic human being
- **humni** is a juvenile human being
- **humno** is a male human being
- **humna** is a female human being
- **humne** is "humanoid" in nature

13. In addition to replacing **kanoi** with Loglan **ko** in sentence 14, I've also replaced **e mendi** and **e humnu** with **e humno**, which already means *and is male and human*. Our definition is now complete. Note that especially in the context of definitions, the biconditional **ko...ki...** can frequently be translated by English *means*.

There is one more step that a logician might be tempted to take. **Normerji** is a negative predicate though it is so covertly. So when we say **ba normerji** in the above definition, we are really saying **ba no merji rabe** (*x is not married to anyone y*); and this, by explicitation and reversal, means **no be goi ba merji be** (*there is no y such that x is married to y*). We could add this feature to the

definiens of **normermeu** if we wished to. But it is probably better to reserve this maneuver for the definition of **normerji** itself, which could then be: **Raba ko ba normerji ki no be goi ba merji be** (*For every x, x is unmarried means there is no y such that x is married to y*). Notice that the scope of **ba** is spread by **ko** over both sentences, whereas the scope of **be** is confined to the second by **goi**. By such easily spoken and consistently handled little words, Loglan has, some say, "made symbolic logic speakable".

However, no one should expect that by making logic speakable, we've made it easy! Thinking logically should, however, become much more comfortable for Logli who dare to use their language in this strange, new, logically explicit way. But of course they are not obliged to! Simple quantifed claims can be spoken much more briefly in both languages without explicit quantifiers, and so they will probably continue to be used preferentially in both. Take the classic universal *All men are rational.* This becomes *For any x, if x is a man, then x is rational*, when cast in the quantified language of English-speaking logicians; and though it is true that this explicitly quantified claim goes much more neatly into Loglan—**Raba kanoi ba mrenu ki ba razdou**—you can hide the quantifiers from this claim just as easily as you can from the English one. Indeed, **Ra mrenu ga razdou** is an almost word-for-word translation of the English *All men are rational*—which, in the Loglan metaphor, means *All men are reason-givers*.

Lopo Purmao

There are three djifoa for devices: -**mai** (**MAtcI,** *machine*), -**pae** (**PAtcE**, *apparatus*), and -**rie** (**tRImE**, *instrument*).

-**mai** complexes refer to machines, often (but not always) with moving or active parts supplied by non-human sources of energy such as wind, fuel, water-power, or electricity. Computers and windmills are typical machines.

-**pae** complexes refer to mechanical devices, usually unmotorized. They are frequently complicated contrivances. Scales and clocks (the kind with gears and mainsprings or weights) are typical apparati. Note the difference between **kopmai** (a copying machine) and **kopypae** (a pantograph, an apparatus for tracing pictures).

-**rie** complexes refer to tools: generally simple implements, such as hammers, screwdrivers, and drills. Tools differ from apparati in simplicity and (usually) in versatility. A screwdriver or hammer has a wider range of uses than a clock. This suffix is sometimes used for making words meaning an abstract means of achieving some end, as in **penrie** (an instrument of thought, such as Loglan is hoped to be).

Roughly put, if it's simple in design, it's a tool; if it's more complicated but still mechanical, it's an apparatus; and if it's anything else, especially something with externally energized parts, it's a machine. As a final example, consider **caprie** (a die or stamp for making an imprint), **capypae** (an old-fashioned printing press with movable type), and **capmai** (a modern, electronic printer).

Lo Nurvia Logla

The following is an excerpt from Mr. Fujitsu's speech.

Hu Sitfa la Loglandias?

Roba kentaa mi da jio moi da mi logli. Irea robe modvi, ice robo raznu. Ibea ia la Loglan sesrie. Ipiu, ne lemi gandia pa danza lepo sesduvrai lo mela Loglan nurkai, e lenei treci ge blicu nurcko. Isui ia Lai hirtakrie. Ipiu mi pa logduo ne notbi stude, ice sei na merji mi. Inurau la Loglan djipo *mi*, ia. I Lai nurmue jurnyrie miu. Ipiu mi ze sei logla turka. Ibuo na lopo ba kentaa mi la Loglan gu, lemi retpi ga notbi, e rana stari da. I ia Lai racrie. Ifeu, mi dapli lepo lopo racyspe la Loglandias ga mutce pluci ce treci mi.

Uuuo neba kencue li, La Loglandias! I hu sitfa la Loglandias? lu. I da pa blemao mi lo cartu.

Ie le gunti? No Lai *dzabi*, ua!, hue da.

Raba goi ba gunti, o he?, hue mi.

Ra gunti ga nu vizgoi. Isui ra nu vizgoi ga fizdi. I la Loglandias soaki no fizdi ki no gunti, hue da.

Letu komta ga katli ho ridsrimai?, hue mi.

Toi sanpa hu? Iceu to norstifa, e ne stifa, hue da.

Ibuo letu baprysio ga lispro fecu ridsrimai, hue mi.

To rei duodza, hue da.

Liu duodza sanpa lepo raba ko ba duodza ki ba no fizdi dzabi, ebuo biucli lo fizdi dzabi. I ei toi no tradu?

Ia.

Nao la Loglandias duodza gunti. I leLai sitci ga logli grupa, e sui komta netsio. I ba speni Lai tie lo telfo ca fekteo. Isui ia da speni ne retca lenfoa ce kultu. I kanoi tu dutci toi, ki tu fui duvrai vizgoi Lai. I *mi*, ui, fa gozkii tu. Ibuo fao, soaki lo logli ga biucli lo nurgui je Lai, ki rea Lai gunti lei, ica Lai dui go duodza.

Lo Kenti

1. Moihu la Men Fudjitsus, logli? (Plizo, eo, leFai retpi.)
2. Ei la Loglandias nu cartu?
3. La Loglandias he?
4. I duohu ba godzi Lai?

Lona Cninu Purda

Word	*Definition*	*Clue words*
baprysio	... is the operating system of computer ...	[**BAPRa** (**Y**) **SIstO** = operating-system]
bivdu	... behaves in manner ... in situation ...	(*behave* [**BIheiV**], *do* [**DU**])
blemao	... makes ... look at ... / insists on showing [person] ... [thing] ...	[**BLEka MAdzO** = look-make]
cartu	... is a map of ... made by ...	(*chart* [**tCART**])
duodza	... is virtual in deed or function ... in system/conditions ...	[**DUrzO DZAbi** = doer-exist, exist as a doer]
biucli	... behaves/acts like ... in respect ...	[**BIvdU CLIka** = behave-like]
dutci	... doubts that ... is true of ...	(*doubt* [**DaoT**], *dubious* [**DUbI,ys**])
duvrai	... looks for ...	[**DUVri tRAtI**]
fekteo	... is a modem in system ...	[**FEKto TELFO** = fact (data)-telephone]
fizdi	... is physical/concrete (not abstract)	(*physical* [**FIZIkl**])
gozkii	... goes with ... to ... from ... via ...	[**GOdZi KIncI** = go-accompany]

hirtakrie ... is a tool of communication used by ... under conditions ... [**HIRti TAKna tRImE** = hear-talk-tool]

jurnyrie ... is a means of earning (provides 'gainful employment') for ... under conditions ... [**JURNa** (**Y**) **tRImE** = earn-tool]

katli ... is characterized by quality/feature ... (*quality* [**KuALiTI**])

komta ... is a computer (*computer* [**KyMpiuTr**], *S./P. computador* [**KOMpuTAdor**])

lokfoa ... is a dialect of language ... used in/by ... [**LOKti FOrmA** = local-form]

lispro ... lists/produces a list of the elements of set ... in order ... [**LISta PROju**= list-produce]

matci ... is a machine for use/function ... (*machine* [**MACIn**])

netsio ... is a network of/among members/nodes ... [**NETre SIstO** =netsystem]

norstifa ... is flexible/non-rigid in movement ... [**NO**(**R**) **STIFA** = non-stiff]

nurcko ... is an effect of cause ... under conditions ... [**NU**(**R**) **CKOzu** = is-caused]

nurkai ... is a quality/feature of ... [**NU**(**R**) **KAtlI** = characterizes]

nurmue ... is more moderate than ... in quality ... [**NU**(**R**) **MUtcE** = exceeded]

pogmai ... is a programmable device for doing ... (e.g. microwave ovens, VCRs, looms, etc.) [**PrOGa MAtcI** = program-machine]

racrie ... is a means of travel to ... from ... via ... [**tRACi tRImE** = travel-tool]

racyspe ... experiences [place, culture, etc.] ... by traveling to it [**tRACi** (**Y**) **SPEni** = travel-experience]

ridsrimai ... is a disk-drive in system ... [**RIDle SRIte MAtcI** = read-write-machine]

retca ... differs from ... in feature ... (*different* [**difeREnT**])

sesduvrai ... experiments with ... to find ... [**SEnSi DUVri tRAtI**= science-hunt (discover-try)]

sesrie ... is a scientific instrument for ... [**SEnSi tRImE** = science-tool]

sitci ... is a city/town with hinterland ... (*city* [**SITI**])
spegoi ... goes to ... to experience (its) ...
[**SPEni GOdzI** = experience-go]
stari ... surprises/startles ... by [doing] ... (*startle* [**STARtl**])
stifa ... is stiffer than ... in direction ... (*stiff* [**STIF**])
stude ... studies/is a student of ... at (institution) ...
(*study* [**STyDi**])

Little Words

piu in particular (free modifier)

Summary: Lesson 15

1. Every non-designating variable influences the range and meaning of all the other non-designating variables that follow it in a given clause or string. This is why it's important to know the exact scope of these variables and to avoid moving them around (by conversion) in a way that changes their order, and so the meaning of a sentence.

2. Non-designating variables may be "fronted", that is, moved out of the body of a sentence to the head of it, but they must be kept in the same order in which they appear in it. When fronted, these variables take their quantifiers and negations with them, leaving only convertable positive existentials behind. This string of fronted variables must be separated from the rest of the sentence by a scope-extending device, usually a kek or the word **goi**. Such a string of fronted variables forms that clause's or that sentence's "quantifier string".

3. A kek spreads the scope of its quantifier string over the entire scope of that kek This will usually consist of at least two clauses of some connected sentence, and may be more. **Goi** extends the scope of its quantifier string over just one sentence, although that sentence may have connected arguments or predicates and so be expandable into many clauses. Thus (i) **Raba goi ba humnu, noa razdou** and (ii) **Raba kanoi ba humnu ki ba razdou** are the two ways of making the quantifiers in the claim *All humans are rational* explicit. Most quantified sentences may also be quantified "implicitly". The implicit forms of (i,ii) are (iii) **Raba humnu, noa**

razdou and (iv) **Raba kanoi humnu ki razdou** respectively. By hiding the quantifiers completely, one can also say **Ra humna ga razdou** (*All humans are rational*) in Loglan with the same brevity that one can in English.

4. If there are different scopes involved—for example, when two connected clauses share some variables and not others—the quantified form of each variable should be moved in front of its own clause or clauses, while a variable which appears in both clauses should appear in the quantifier string in front of the kek that will embrace both clauses. Recall the definition of 'unmarried'? **Raba ko ba normerji ki no be goi ba merji be** (*For every x, x is unmarried means there is no y such that x is married to y*). Notice that the scope of the universal **raba** runs over both of clauses of this connected sentence, while the scope of the negative existential **no be** is confined by **goi** to the last clause.

5. Quantified arguments should be made explicit, that is, moved into quantifier strings, when their scope extends over more than one clause.

Lopo Notlensea Cirduo

1. Coi lepa nu cutse, raba logli, anoi he?	According to what was said before, what is a Logli?
2. Raba logli, anoi logla penso be.	Everyone is a Logli who thinks in Loglan about something.
3. Ei ba fui cutse li, Raba logli, anoi logla penso rabe, lu?	Shouldn't one say rather "Everyone's a Logli only if they think in Loglan about everything"?
4. Ei tu nusoa logli?	Are you a Logli, then?
5. Ifeu uu no. I ae mio fazi logla penso raba.	In fact, unfortunately not. And I hope we (you, I, and others, independently) will soon think in Loglan about everything.
6. Ei no, lopo plizo lo gleca fa naumro kou tio?	Won't it be harder to use English as a result of that? (Won't using English be harder as a result of that?
7. Soi smikycue, lo gleca ga naumro mi lo logla mi nokou raba.	Confidentially, English is harder for me than Loglan regardless (in spite of everything).

Lesson 16: Dealing with Relatives

Lo Mipli Steti

1. **Le bukcu ji[1] vi le bakso, ga treci.**
   The book [that is] in the box is interesting.
2. **Le bukcu ja[2] vi le bakso, ga treci.**
   The book, which [incidentally] is in the box, is interesting.
3. **Le bukcu jie[3] lea brito largra ga famva.**
   The book that is also known as one of the [class of] British classics is famous.
4. **Levi bukcu jae[4] lea brito largra ga famva.**
   This book, which [incidentally] is one of the [class of] British classics, is famous.
5. **Le bukcu jio[5] mi fa donsu bei tu ga treci.**
   The book such that I will give it [to] you, is interesting.
   The book that I will give you is interesting.
6. **Levi bukcu, jao[6] mi fa donsu bei tu, ga treci.**
   This book, such that [incidentally] I will give it [to] you, is interesting.
7. **Lio 450 dalra, jao[6] lemi farfu pa petci dei dii mi, pa fu ketpi lepo mi traci la Frans.**
   The number $450, such that [incidentally] my father paid it for me, was the price of the ticket for my traveling to France.
   $*450—incidentally my father paid it for me—was the price of the ticket for my trip to France.*
8. **Lio 450 dalra (lemi farfu pa petci dei dii mi) pa fu ketpi lepo mi traci la Frans.[7]**
   $450 (my father paid it for me) was the price of the ticket for my trip to France.
9. **Ti, lepo mi traci la Frans guo, lio 450 dalra, ga ketpi.[8]**
   This, for my trip to France, costing $450, is a ticket.
   In normal English order, *This is a ticket for my trip to France costing $450*
10. **Ga[9] ketpi lepo mi traci la Frans guo, lio 450 dalra, ga[9] ti.**
    A ticket for my trip to France, costing $450, is this.

11. **Ga[10] ketpi, ga[10] ti lepo mi traci la Frans guo, lio 450 dalra.**
    A ticket is this, for my trip to France, costing $450.
12. **La Frans la Italias la Alps gi,[11] la Djim pa godzi.**
    To France from Italy via the Alps, Jim went.
13. **La Alps gi,[12] godzi!**
    Via the Alps, go!
14. **La Almas la Belji'k la Carl ditca.[13]**
    Alma about Belgium to Charles, teaches.
15. **Raba rau danza be bo.[14]**
    Every x justifiably wants some y for some (purpose) z.
    Everyone justifiably wants something for some purpose.
16. **Rau danza be bo ga[14] raba.**
    Justifiably is wanted some y for some (purpose) z, by every x.
    Justifiably some special thing is wanted for some special purpose by everyone.
    In normal English order, *There is something justifiably wanted for some purpose by everyone*
17. **Ta sao[15] *leagues*, lio to.**
    That [foreign predicate follows] measures-in-*leagues* the-number two.
    That's two leagues long.
18. **Lao[16] *Einstein,* bie lea grada fidsesmao ji na la Toni Heknie.**
    [Foreign name follows] *Einstein* is one of the great physicists of the Twentieth Century.
19. **Leva kangu pazi sue *miao*.[17]**
    That dog just [non-Loglan sound sequence follows] *miaow*-ed.

Lona Cninu Purda

Predicates

Word	*Definition*	*Clue words*
bakso	... is a box containing ...	(*box* [**BAKS**])
brito	... is part of British culture	(*British* [**BRITic**])
famva	... is famous for ... among ...	(*famous* [**FeiMys**])
kangu	... is a dog. (See also **kanga**/-**e**/-**i**/-**o**.)	(*canine* [**KeinAiN**])
ketpi	... is a ticket to attend/experience event ... for price ...	(*ticket* [**tiKET**])

largra ... is a classic in field/genre ... among ...
[**LAR GRAda** = art-great]

traci ... travels/journeys to ... from ... by means/carrier/vehicle ... via ... (*travel* [**TRavl**])

Little Words

ga marks the beginning of a deferred subject (first argument) in a predicate-first sentence. It may also be used like other PA words to provide the obligatory mark before the predicates of such sentences. (See Notes 9 and 10)

gi marks the end of a string of fronted arguments. The argument just in front of gi must always be the last possible argument of its predicate. (See Note 11)

ja links predicates, arguments, phrases, or other modifiers to the preceding argument. It forms a subordinate or incidental claim that uses the referent of the modified argument as its first argument. (See Note 2)

jae links a designation of a set or group to the preceding argument to form a subordinate or incidental claim that the referent of that argument is also a member of that set or group. (See Note 4)

jao links a sentence to the preceding argument to form a subordinate or incidental claim involving that argument. The linked sentence must contain an explicit reference to that argument. (See Note 6)

ji links predicates, arguments, phrases, or other modifiers to the preceding argument to provide identifying or limiting information about its referent. (See Note 1)

jie links a designation of a set or group to the preceding argument, thus identifying its referent as a member of that set or group. (See Note 3)

jio links a sentence to the preceding argument to give identifying or limiting information about it. The linked sentence must contain an explicit reference to that argument. (See Note 5)

lao introduces a borrowed name. (See Note 16)

sao introduces a borrowed predicate. (See Note 15)

sue introduces a string of non-Loglan sounds. (See Note 17)

Lopo Lengu Klimao

This lesson deals primarily with relative constructions, devices for mentioning in passing some fact that either identifies something or just gives further information about it. This is often handy, but from a logical standpoint it's better to use separate sentences, which is why I've waited so long to mention this topic. Perhaps by now you're so used to using separate sentences that you won't go overboard with this feature.

Loglan has two types of relative devices.

When an English relative pronoun refers to an argument, use one of the Loglan linking words (**ji** and kin) to translate it: *The book that is red is interesting* = **Le bukcu ji redro ga treci**. But when it refers to a predicate, use **go**: *This is a book that is red* = **Ti bukcu go redro**. What **go** does is treat the relation between these words as an adjective-noun or adverb-verb relation, but inverts it. In this lesson we'll be primarily concerned with the first kind of relation, the kind that uses links to arguments.

Finally, we'll look at some ways of departing from the normal word-order of Loglan sentences.

Notes:

1. **Ji** introduces a sort of abbreviated **bi**-utterance. The example sentence means much the same thing as **Le bukcu (bei bi le nenri je le bakso) ga treci**. But look how concise the **ji**-phrase is! You just mention something that tells your listener where to look: a place (**ji vi** *here*), a time (**ji pa lepo tu brana** *before you were born*), a description (**ji le redro** *the red one*), or a name (**ji la Bibl** *the Bible*). The equivalent **bi** constructions would take up a lot more space.

You can also use a predicate (**lemi brudi ji ditca** *my brother who teaches*); the meaning is about the same as a description (**lemi brudi ji le ditca** *my brother who is the teacher*), and a bit shorter. (In fact, the difference is that **le ditca** assumes that you've mentioned him before: *the one in question who seems to teach*. The predicate is probably the first reference to his teaching; it doesn't point to a previously-mentioned person, but gives identifying information by telling you what type of person he is: the type you might see leading a class, perhaps.)

Incidentally, just as **gue** closes off the last open **je**-phrase and **guo** ends the last open **po**-phrase, so **gui** terminates **ji**-phrases (and phrases made with **ji**'s relatives: **ja**, **jie**, etc.). It's a little easier to get into trouble with an unclosed **ji**-phrase than it is with the others, so again, if in doubt, use the specific terminator provided.

2. **Ja** introduces a predication, though it otherwise works just like **ji**. The claim is incidental (*and by the way, ...*) and it is a genuine claim; it doesn't just identify. You can probably understand how **Le bukcu ja redro** could be a short version of **Le bukcu (ice bei redro)**. But how can **vi le bakso** predicate? In this case (and wherever non-predicates are used after **ja**), the phrase is in effect an argument or modifier for an unstated predicate. The parenthetical remark might be **(ice bei dzabi vi le bakso)** *(and it exists in the box)*. (It could also represent an actual predicate: **(ice bei nenri le bakso)** *(and it is in the box.)* Likewise, **lemi brudi ji le ditca** would be short for **lemi brudi (ice bei bi le ditca)**, while **lemi brudi ja le ditca** would be short for **lemi brudi (ice bei samto le ditca)** *(and he is the same as the teacher).*

This brings up an important question: what is the difference between **Le brudi bi le ditca** (*The brother is also known as the teacher*), and **Le brudi samto le ditca** (*The brother is the same as the teacher*)? You may recall that claims are not generally about designations, but about things designated (*designata*). So **samto** claims that the things designated by the labels "**le brudi**" and "**le ditca**" are the same thing. **Bi** utterances, on the other hand, are always about designations, never designata. So the **bi** sentence links two labels ("**le brudi**" and "**le ditca**") as equivalents: you can use them interchangeably to designate the same thing.

This distinction seems vanishingly small in English. Don't the sentences mean the same thing? Ultimately, yes, just as *Dave hit the ball* and *The ball was hit by Dave* mean the same thing. But there is a difference of focus and viewpoint. In Loglan, statements about labels and statements about the things labelled are just as distinct, and the distinction is sometimes logically important.

3. **Jie** is to **bie** what **ji** is to **bi**. The identification points vaguely to some member of a group.

4. **Jae** is the predicating version of **jie**. It introduces an incidental claim of membership in a group.

5. Jio (*such that*) is used for links to sutori places of a predicate. **Ji** and **jie** act as the first argument of any following predicate (**Mi ji donsu tu le bukcu ga brudi tu**. *I who give you the book am a brother to you*); **jio** makes it possible to make a link with a sutori place in a full sentence. Note that you do have to make a clear reference to the original argument (as **bei** refers to **le bukcu** in the example sentence). Otherwise, how could anyone know which argument in the relative clause refers back to the argument being modified?

6. **Jao** is the predicating version of **jio**.

7. Sometimes a **jao**-clause is long enough, and incidental enough, to deserve being put in parentheses. Example 8 shows how. The parentheses **(...)** are, of course, pronounced **kie...kiu** when read aloud, just as the three numerals in **450 dalra** are pronounced **fofeni**. Examples 7 and 8 mean about the same thing, though in 8, the subordinate clause is even more incidental.

8. Loglan is an international language. Many important languages—including Japanese and Hindi—like to put the predicate last, as in this example. In such languages the entire argument string normally comes ahead of the predicate. Here's another example: **Mi la Djan la Meris farfu** *I, of John, by Mary, am the father*. With only a little practice such sentences are as easy to understand as sentences in what we English-speakers regard as the proper word order. Loglan can handle either order equally well. What matters in Loglan is the order of the arguments, but where the predicate comes in the argument string is speaker's choice. **Mi la Djan farfu la Meris** is just as understandable—to a Logli—as either of the other positions of the predicate in this argument string.

9. As this next example shows, even predicate first word-order is possible, though it requires two marks. The first mark, in this case **ga**, prevents initial predicates from being interpreted as imperatives. (This explains why genuine imperatives must *not* be marked in Loglan.) The mark I've used is the neutral mark **ga**, but it could be any PA word. It tells us that the first argument is deferred. The

second mark, which is also in this case **ga**, tells us that the deferred first argument is about to follow. Any PA word can be used for the first mark; but only **ga** may used for the second.

10. The marked first argument—in this case, **ti**—can come anywhere after the marked predicate in predicate-first sentences. Then, orienting themselves to that first one, the other arguments can take up their proper places in the argument string.

The predicate-first form is often used in literary English: *The daughter of Henry VIII by Ann Boleyn, was Queen Elizabeth I*: **Pa detra la Henris Von, la An Bolein, ga la Garf Eli'zybeq Nen**. In English translation this sounds like an identity sentence, but is not. It is a statement in predicate-first word order that gives information about the parentage of this English queen.

Notice that, in English, the tense, if any, of the predicate of a predicate-first sentence isn't specified until the *second* mark is spoken. In Loglan tense is communicated right along with the first mark, for the tense marker will be in its normal place just before the predicate.

Almost any word order is normal in some human language. For example, Hebrew and Welsh like to put the predicate first. As we have just seen, we can easily imitate this order in Loglan. Another word order, though less common, is speaking the sutori arguments first and the first argument just before the predicate, which comes last. Amazingly, this does happen in some languages. We can even make it happen in English: *To France from Italy via the Alps, Jim went* is a somewhat strained example. The next example shows how even this word-order may be imitated in Loglan.

11. Speaking either the last argument, or the last several arguments in an argument string, first, is called fronting them; the little word **gi** is always used to mark the last element in such a fronted string. In the example sentence, all the sutori arguments of **godzi** have been fronted; but it is not necessary to front all of them. For example, in **La Italias la Alps gi, la Djim pa godzi** *From Italy via the Alps, Jim went,* all mention of the destination, France, has been omitted; in **La Alps gi, la Djim pa godzi** *(Via) The Alps, Jim went,* both middle arguments have been omitted and only the route

is mentioned. Fronting arguments with **gi** is thus a convenient Loglandical way of skipping over the middle places of a predicate, when, for example, the occupants of these places have already been established, or their identity may be assumed.

12. The main goal of **gi** is to let you cut right to the predicate's last blank. You must put an argument in that blank when using **gi**, but you may skip all of the predicate's other blanks—including the first one. When you do skip the first one (as in example 13), you have uttered a command (recall that that's what a sentence without its first argument is). Thus **Ti gi, ridle!** *From this, read!* is just another, particularly emphatic way of saying **Ridle ba ti!** *Read something out of this!* There's no particular economy in using **gi** with **ridle** because it only has three places; but with other, longer predicates it's often convenient to use **gi** to make mentioning any medial place unnecessary. **Sanpa**, recall, has five places: ... *is a sign of* ... *to* ... *meaning* ... *in situation* ... . So **Ti gi, ta sanpa** is an extraordinarily economical way of saying *In this situation, that's a sign.*

13. You can put the predicate almost anywhere in a Loglan sentence. In the example sentence, the predicate is spoken last; but we can move it forward through its string of arguments until it reaches the head of the sentence—all without changing the claim. Abbreviating, we start out with **A B C ditca** (*A about B to C teaches*); thence to **A B ditca C** (*A about B teaches C*); thence what we English-speakers think of as normal order **A ditca B C** (*A teaches B to C*); and finally **Ga ditca ga A B C** (*Teaches, does A about B to C*). Only the predicate-first order requires special marking in Loglan. Because **ga** always precedes the subject in these marked sentences, their argument-strings form a closed loop. These loops can be freely rotated: **Ga ditca C ga A B** (*Teaches to C, does A about B*) rotates the loop one place clockwise and **Ga ditca B C ga A** (*Teaches about B to C, does A*) rotates it two places clockwise. All three rotations make the same claim.

Gi makes similar loop-like rotations possible. The predicate-last order (**A B C ditca**) can be rotated with gi into two other positions: **C gi, A B ditca** (*To C, A about B teaches*) and **B C gi, A ditca** (*B to C, A teaches*). The order with the predicate in the middle (**A ditca B C**) also has a **gi**-ed rotation: **C gi, A ditca B**.

You're probably wondering how incompletion (leaving certain arguments unmentioned) can possibly work with this many word orders. The answer is that if you follow just two rules, it will. Despite your talking incompletely (as most of us do), the arguments you do mention will remain identifiable if you follow these two rules. The first rule is the old one that, if there is no **gi**, any consecutive string of one or more arguments may be dropped off the righthand end of the argument string. The second is a new one. If there is a **gi**, then any substring from the *middle* of the argument string may be dropped but the ends must remain intact. In other words, the argument before **gi** must be the last possible argument of its predicate.

You've probably also been wondering whether we can get away with re-ordering non-designating variables in these abnormal ways without changing their claims. We couldn't do that by converting predicates. Is the situation the same here? The answer is yes. In Loglan, the rule for making quantifiers explicit tells us to make copies of the non-designating variables, together with any of their associated quantifiers and negatives, and put those elements in a string *in the same order in which they appeared in the original sentence.* We then put that string at the head of the sentence. At the same time, we remove the quantifiers and negatives from the non-designating variables in the body of the sentence. Doing this will make the claim of the original sentence magically clear.

14. Obtained from example 15, this quantifier string is **Raba be bo goi**, which may be read in English as *For every x there is a y and z such that...*, The body of the sentence then reads **ba rau danza be bo** *(x justifiably wants y for purpose z).* From example 16, we get the quantifier string **Be bo raba goi...** *(There is a y and there is a z such that, for every x,...)* and the body is **rau danza be bo ga ba** *(justifiably wants y for purpose z, does x).* Thus understood, the two sentences obviously make very different claims. So we see that changing the order of non-designating variables by putting their sentences in abnormal word-order is no more legitimate than converting the predicate of a sentence with non-designating variables.

15. **Sao** [foreign predicate follows], (note the comma) is a device for bringing foreign words into Loglan speech and text without messing things up. All **sao** words are predicates, and they are treated in

Loglan as the types of predicates that their sources are in their own languages. In text, it is customary to italicize the imported word.

16. Another Little Word, **lao**, is used for marking foreign names. These borrowed names are italicized and followed by pauses, just as **sao** words are. **Sao** is generally more useful than **lao** because you can make arguments out of sao borrowings with one of the army of descriptors we've met so far.

You may be wondering why we didn't just transcribe Einstein's name into Loglan sounds, as we did Mary's and Bob's. Well, we could have; but if we had, it would have come out **Ainctain**, and not be very recognizable. The **lao** *Einstein* form is therefore used for famous people whose names we all recognize in print but might not recognize in phonetic transcription.

Another common use of **lao** is to import the Linnaean species names of biology. Thus **Lao *Escherichia coli*, speci go mamlu intestini bakteri** = Escherichia coli *is a species of mammalian intestinal bacteria.* It is customary not only to italicize Linnaean terms, but to spell them out in Latin letters in all languages—including ideographic ones like Chinese!

17. **Sue** is the inverse of **sao**. It turns any arbitrary string of sounds—either as produced by the speaker after saying **sue**, or spelled as best he can in Loglan letters after writing **sue**—into a Loglan predicate word. That word then means that someone or something is producing just that sound. Here, we've accused this poor dog of **sue-*miao*-**ing; we could just as well have accused a cat of **sue-*rrrff-rrrff*-**ing

You're probably wondering why I didn't mention **sao** in Lesson 1. I could have. However, **sao** almost begs to be overused by beginners, so it's better they not even know it exists until they have enough experience and Loglandic maturity to use it properly. As a rule, you should only use **sao** for a spur-of-the-moment borrowing of a culture-specific term—like *de-ja-vu* or *atlatl*. Otherwise, just think up a complex for that notion or follow Loglan's standard procedures—its borrowing algorithm—for putting foreign loan-words in Loglan forms. (Words like **intestini** and **bakteri** have been borrowed by that algorithm from the International Scientific Vocabulary. So they

are not only instantly recognizable by anyone who knows this vocabulary, but they also parse like native Loglan words. (What does **ethili** mean? That's right. But it's pronounced [et-HEEL-ee].) Rules for applying this algorithm are detailed on pages 430-453 of *Loglan One*, available from The Loglan Institute, Inc.)

Lopo Purmao

In the reading that follows, we'll talk about discovering (-**dui** from **DUvrI**, *discover*) and experiencing (-**spe** from **SPEni**, *experience*).

-**dui**/**duv**- is used for discovering information. It is especially common in mathematics, as in **sumdui** *find the sum of ... and ...* [**SUMji DUvrI** = sum-discover]. Discovery is often, even usually, intentional. It is also more intellectual than other kinds of experiences.

You've already encountered -**spe** and **speni**. Experiences are more intense and less intentional than discoveries.

Consider the following pair:

ridydui ... discovers ... by reading about it.
[**RIDle** (**Y**) **DUvrI** = read-discover]
ridspe ... experiences ... by reading about it.
[**RIDle SPEni** = read-experience]

Both words are about reading, but the first involves researching a topic (discovering); the second, vicariously living something you've read about (experiencing). This same difference exists even when the corresponding djifoa are prefixed:

duvcia ... learns [about] ... by exploration.
[**DUVri CIrnA** = discover-learn]
specia ... learns [about] ... by experience.
[**SPEni CIrnA** = experience-learn]

Finally, -**hea** (from **HElbA**, *help*) refers to various kinds of assistance:

cirhea ... tutors ... in subject ... [**CIRna HElbA** = learn-help]
cmehea ... underwrites/subsidizes ... in undertaking ... with amount ... [**CMEni HElbA** = money-help]
donhea ... donates to ... gift ... for cause ...
[**DONsu HElbA** = give-help]
tcihea ... feeds ... food ... [**tiTCI HElbA** = eat-help]

Lo Nurvia Logla

Fao, la Loglan he?

Mi trati lepo repduo toi vi le satci je le bukcu. I ae lezo tu napa spedja lo logla nurkai, na tsufi lepo tu repduo da. I la Loglan *retca*, ia rea, la Inglic. I ae tu napa funcea loLai norgleca penfoa. I lozo Lai cildre *suna,* ii, roicko. Ibuo lopo Lai tenmao lo nurpeo je tu ga io tsufi ju barda tu lopu nardu ce turflo.

Ui tu pa duvri suriba ji treci ca lodhea nurkai je la Loglan gui, e sui lepo robe lengu plefoa, e loglo, pae. Ifeu la Loglandias groda ci nurpeo ce cmalo ci nurdui sitfa. Inusoa io li, Lai nursia hu?, lu soa no nu repduo rabo na. I tu foi repdurkii lo notbi logli nei fa.

Nao peu le notbi kenti ji li, Moihu mi selfau?, lu gea tu dau kanmo lepo repduo sei na. I le ri stupeu, jio mo pa ridle jmite seo vi lovi nursri mipli, napa fu raznu ce fu modvi lopo logcia ro retca. Ibea la Deinys hapci cirdui lo lengu ce kultu. I Dai fundi lopo lenspe lo lodji. I la *Karl*, io, haispe lepu la Loglan lodhea, e cildre. I sui Kai tie Lai lodspe. I la Betis nu pluci lepu Lai vefhea. I la *Sitas*, io, nu treci lo loglo larte. I leSai merji ga lenspe lo loglo, e lo logli. Ifeu, soi smicue, raba jie leuvi fikco logli, ga *cmiza*, ia, la Loglan.

Coa, la Loglan hirtakrie lo logli, a lei ze lolei komta. Isui Lai *racrie*, ii, su duodza gunti. Isui ii Lai penrie. Isui Lai soa lengu. I hea *tu*, ae, Lai fa dzabi dui.

Fao, la Loglan he? I, moihu tu *fui*, ue, selfau? I biu ba tu, e *ni*, ii, notbi fa repduo coi lemi retpi. Ica no coi rei. Ibuo lo mela Loglan nurkai ce cirmoi fa meatu.

Djudi le lengu! Inoca djudi tu.

Lo Kenti je Lotu Nu Jupni

(These are personal enough to have you work out the answers on your own. The questions are translated in the Answers section, however.)

1. Ei tu fundi lo norgleca nurkai je la Loglan?
2. Hu nu fundi ca no nu fundi logla?
3. Hu modvi ca raznu lopo tu logcia?
4. La Loglan he?

Lona Cninu Purda

Predicates

Word	*Definition*	*Clue words*
bakteri	... is a bacterium/are bacteria of type/species ... favoring host(s)/ habitat(s)	**(Sp. *bacteria* [**BAKTERIa**])**
barda	... rewards ... for ... with reward/benefit ...	(*reward* [**riuARD**])
brana	... is born to ...	(*born* [**BoRN**])
cildre	... is precise/exact in respect/area/function/dimension ...	[**CITlu DREti** = in-detail-correct]
cirdui	... discovers ... by learning about it from ...	[**CIRna DUvrI** = learn-discover]
cirmoi	... is a motive for ... to learn ...	[**CIRna MOdvI** = learn-motive]
cmiza	... is amused by/has fun with ...	(*amuse* [**yMIuZ**])
djudi	... judges ... to be ...	(*judicial* [**DJUDIcl**])
funcea	... grows fond of ...	[**FUNdi CEnjA** = fond-become]
intestini	... is/are the intestine(s) of ...	(Sp. *intestino* [**INTESTINo**])
katmu	... is a cat. See also **katma**/-**e**/-**i**/-**o**.	(*cat* [**KaT**])
klemue	... is very extreme/among the most extreme in property/dimension ...	[**KLEsi MUtcE** = categorically-extreme]
lenspe	... experiences ... through language ...	[**LENgu SPEni** = linguistically-experience]
lodhea	... encourages/is an aid to/promotes the use of logic in ... by ...	[**LODji HElbA** = logic-help]
lodspe	... experiences ... by doing logical transformation(s) ...	[**LODji SPEni** = logically-experience]
mamlu	... is a mammal. See also **mamla**/-**e**/-**i**/-**o.**	(*mammal* [**MaML**]; Sp. *mamifero* [**MAMifero**])
nenri	... is inside ...	(*in* [**iN**])
norgleca	... is non-English in feature ...	[**NO**(**R**) **GLECA** = non-English]
nurdui	... is known to/explored by people ..., as of areas/principles/facts.	[**NU**(**R**) **DUvrI** = discovered]

nurpeo ... is a topic for thought to ...
[**NU**(**R**) **PEnsO** = thought]
nursri ... is a written work/document/text produced by ...
[**NU**(**R**) **SRIte** = written]
penfoa ... is a thought-form, a way of thinking, used by ...
under conditions ... [**PENso FOrmA** = think-form]
penrie ... is a tool for thought about ... used by ...
under conditions ... [**PENso tRImE** = think-tool]
plefoa ... is a game played by ... [**PLEci FOrmA** = play-form]
repdurkii ... joins ... in answering question ...
[**REtPi DURzo KIncI** = answer-do-accompany]
roicko ... (unintentionally) annoys/irritates ... ;
cf. **roimao** for intentional annoyance.
[**gROcI CKOzu** = angry-cause]
samto ... is the same as/identical to ... (*same* [**SeiM**])
selfau ... bothers/takes the trouble to do ...
[**SELji FAtrU** = self-trouble]
stupeu ... is a character in story ...
[**STUci PErnU** = story-person]
sumdui ... obtains/finds sum ... from addends ... (Plural set)
[**SUMji DUvrI** = sum-discover]
sumji ... is the sum of ... increased by ... (*sum* [**SyM**])
tedklipu ... fascinates/holds the attention of ... by doing/being ...
[**TEDji KLIPU = attention-keep]**
tsufi ... suffice(s) / is/are enough for purpose ...
(*sufficient* [**SyFIcynt**])
turflo ... is arduous for ...[**TURka FO/Lma** = work-full]
vefhea ... enhances/encourages creativity for/in person ... by ...
[**VEtFa HElbA** = invent-help]

Little Words

biu possibly, in the objective sense; from **blicu** *possible*. (PA) Cf. **ii** for the subjective sense

gui (special version of **gu**. It terminates the preceding **ji**- or **ja**-phrase or any of their relatives.) From **gu** + the **i** of **ji**.

pae and so forth; from **prase** *continue*. (UI; but does not emphasize the preceding word like other UI words.)

Summary: Lesson 16

1. There are two types of linked relative constructions in Loglan: those that identify and those that predicate. All use links that begin with **j**- followed by either -**i**- (identifying) or -**a**- (predicating or asserting) and sometimes have a third vowel (**jie jae jio jao**).

2. **Ji**/**ja** link a predicate, modifier, or argument to some other argument in order to identify or restrict its referent (**ji**) or say something subordinate or incidental about it (**ja**).

3. **Jie**/**jae** work like **ji**/**ja** but by linking to the modified argument a designation of a set or group to which the referent of that argument belongs. Again, the sense is either identifying (**jie**) or predicating (**jae**).

4. **Jio**/**jao** also work like **ji**/**ja** except that now the element linked to the modified argument is a sentence. The linked sentence must always contain a reference to the argument to which it is linked. For example, in **le mrenu jio mi pa vizka mei** the variable **mei** refers back to the referent of **le mrenu**. Again, the sense of the relative clause is either identifying (**jio**) or predicating (**jao**).

5. You can postpone the first argument of a predicate by placing any inflector before that predicate and then, when the first argument is finally spoken, marking it with **ga**: **Soa langa la Djek, ga la Djan** *Arguably taller than Jack, is John.*

6. Some or all of the sutori arguments of a predicate may also be fronted (brought to the beginning of the sentence). But they must include one that fills the last place of that predicate and be separated from the rest of the sentence by **gi**: **Da gi, la Djan langa** *By amount X, John is taller.*

7. **Sao** and **lao** are lefthand marks of foreign words. **Sao** marks predicate-like words and **lao** marks argument-like ones, usually names. The foreign words themselves are always pronounced and spelled in their own foreign ways, and their righthand ends are always separated from Loglan speech or text by pause-commas. Such marked words should be used sparingly, only for internationally-used scientific words like *Australopithecus,* for instance, or culture-specific ones like *potlatch* or *deja vu.*

8. Using intact foreign words by marking them is distinct from borrowing a foreign word and its associated concept. Borrowing a word means giving it a Loglan shape and speaking it in Loglan; and by that means the concept of the original can then be imported intact. The algorithm for doing this is a bit complicated, and certainly beyond the scope of this book. But it is fully described in *Loglan One*, another book available from The Loglan Institute.

Some examples of algorithmic borrowing are **intestini** *intestine*, **protoni** *proton*, **ethili** *ethyl*, **sikhosi** *psychotic*, **bakteri** *bacterium*, **athomi** *atom*, **kuarki** *quark*, and **tubherkulosi** *tubercular*. The algorithm is easily applied, and by this means the entire International Scientific Vocabulary may eventually be imported into Loglan. To seed this long-term project, a fair-sized chunk of that vocabulary has already been imported. The *Loglan Online Dictionary (LOD)*—the computer software that contains this seed-stock and, indeed, the entire current vocabulary of Loglan—is also available from The Loglan Institute.

Lopo Notlensea Cirduo

1. **Le tora ji va skitu na *penso*, ia! I hu vetci?**
   That pair sitting over there is *thinking*, certainly (is really thinking). And what's going on?
2. **Ta po sao go.**
   It's a game [instance] of Go.
3. **Lao Go, ja ponjo plefoa, ga ke tedklipu ki klemue nardu.**
   Go, a Japanese game, is both fascinating and extremely difficult.
4. **La Men Fudjitsus, jae leva tora, e jae lea siodja lao Go, *no*, feu, ga sao go, spuro.**
   Mr. Fujitsu, who is one of that pair, and one of those who understand Go [i.e., its rules and system of play], *isn't,* actually, a Go expert.
5. **Buo la Men Fudjitsus, e leFai fremi ga haispe le plefoa.**
   But Mr. Fujitsu and his friend enjoy the game.

TRANSLATIONS OF LO NURVIA LOGLA

If you had difficulty understanding anything in the Lo Nurvia Logla sections, these translations will help clarify the Loglan usage.

In translations of the early texts, attitudinals (which are not part of the claim being made, but suggest the speaker's attitude) are shown between |bars.

Lesson 3

b: |There-we-are!| the learner [main predicate] attentively reads. And you read what?
l: This (the-here) book.
b: And-of-course |annoyance| ! (That's obvious!) And it (b=bukcu) is-what-kind-of book?
l: It is-interesting.
b: You *Loglanistly* (like a loglandian person) certainly think ! And is-it-the-case-that it is-a-loglan-language book? (a book in Loglan)
l: |Satisfaction| ! (ua can be translated in many different ways, depending on context) And yes, it is-a-loglan book.
b: And it is-a-*textbook* in-fact.
l: Yes. And |obligation| (I must) I go now. And my (the-me) learning group will talkingly practise tonight (at-the-time-of this night) at-the-place-of the school. And |requesting permission, please| I use (may I use) your (the-you) car?
b: |Permitted|. And-however (But) it (t=tcaro) is-broken.
l: |Surprise|. And what (past) caused this-state-of-affairs? And it-is-not-the-case-that it was broken this morning (at the-present morning).
b: |Question| you (past) lost your bicycle?
l: No. And-however (But) the school [main predicate] is-very distant.
b: |Hoping| I give-a-ride [to] you [to-destination] it (c=ckela) later.
l: |Hoping| |certainly|.
b: Of-course |permitted| you stay-at this. (You may stay here) And |hoping| I will quickly repair the car.
l: |Surprise| |question|? And thank-you, |should| not. And |obligation| I leave now. And |please| kindly transport me later. And goodbye.

Lesson 4 At the school

Says Dana: Hello, Paul.

Says Paul: Hello, Dana. And how are you? (you what-kind-of)

D: I am tired. In-fact I came here by bicycle. (I bicyclingly go-to this) And Karl's car (the the Karl car) is broken.

P: |Regret| |surprise|. And...

(*Audrey and someone arrive*.)

Hello Audrey. And that is who?

A: Hello Paul.

Hello Dana.

This is (is-also-known-as) the Doctor Inez Delrios, O Paul.

D: |Pleasure| I meet you, O Doctor. (Pleased to meet you) I'm Dana.

P: I happily-meet you. I'm Paul.

A: D probably isn't happy. (|Probably| it-is-not-the-case-that).

P: And he *is-angry* certainly [at] his brother.

D: *I'm* not angry. (And not *me* is-angry).

I: Are you a-beginning-loglanist, Dana?

P: Yes. And Karl is-a-loglanist. However he (Karl) doesn't help him (Dana).

I: Which Karl?

P: Karl is the brother of Dana.

I: Oh dear! (|regret+annoyance|) And it-is-not-the-case-that your brother uses-Loglan here [with] you |is-that-so|?

D: He *uses-Loglan* certainly. In-fact it isn't *Karl* that bothers me. And *Paul*, however...

P: Please be-kind, Dana. You are-tired and angry.

Actually Dana *biked* here.

I: The sky sure is cloudy *now*. (*The-present* certainly sky is-cloudy) You will be-rained-on. Please let me give you a ride.

D: That won't be necessary, thanks. K will take me.

(*The group now enters the school. And after that it (g=group) comes-out*.)

P: The sky is *now* |pleasure| clear. In-fact there are no clouds here. (no something is-a cloud) It (s=skati) was very cloudy, and now is-cloudless.

D: That's good! (|Satisfaction+pleasure|)

(There's) Karl!

Apparently the car is now repaired.

Lesson 5 What's Betty like?

D: Who will repair the car? Obviously not *you* are-an expert car-repairer.

[Here **ci** groups **tcaro** and **nakso**, so that **spuro** qualifies the combination. Without the **ci**, it would say, "you aren't a repairer of expert cars".]

K: Unfortunately you're right. And Betty is-doing-the-repair.

D: Which Betty?

K: She is the car repairer. Don't *get-angry*, please. In-fact, you probably don't know her. And "B is like-what?" is-better-than your question.

D: In what way is it better? (It (that statement) is-better-than it (k=kenti) [for-purpose] what?)

K: Roughly-speaking, it is-more-interesting.

D: Thanks |annoyance|.
Well, what is Betty like?

K: I happily answer your thinkingly full question. She is-a-friend-of me. And she is-very like Audrey, [in] her appearance. However she is-shorter-than her.

[Note how the Loglan distinguishes the 'she's' — O or B.]

D: Is the [one who is] shorter than Audrey, in her appearance [main predicate] a Loglanist?

K: I am-teaching Loglan [to] her. I am-an-experienced Loglan teacher. And B is-an-experienced car repairer.

[This is another way to group **tcaro** and **nakso**. Without **ge**, it would mean "a repairer of experienced cars".]

D: This car repairer is what-kind-of car driver (operator)?

K: She fast drives an older than her car,

D: Clearly it-is-not-the-case-that she [is a] wise driver [for a] car expert. And *Audrey* however is a very wise driver.

K: I don't know. But Betty is-kind. And she is-much kinder [to] me [than] Audrey [is].

D: Really?! Perhaps B is-kinder [to] you [than-is] O.

K: And O is-kinder-to *you* perhaps [than] O [is to] me. However let-us aimiably talk [to] B. Shall we?

D: Certainly I-intend-to. I-hope I shall know her. And I-hope she is-as-kind [to] me [as-is] O.

K: And I-hope B is-as-kind [to] you [as-is] B [to] me.

Lesson 6 The Hungry Tutor.

K: Hello Dana. You learned what at the school?
D: Audrey was speaking about connectives. (connective-ly spoke).
K: And what connectives did she talk about? (she what-kind-of connectively spoke)
D: Eh? (|Surprise+question|) I don't know.
K: There are logical connectives. (Something-x is/are logical connective) And there are causal connectives. (Something-y) The-word **a**, for-example is-a-logical connective. And the-word **kou** is-a-causal connective.
D: Evidently O logical connectively talked.
K: Now, are you going to learn Loglan, or go to a restaurant tonight? (You loglanly learn, how-related-to restaurantly go)
D: Both. (And) And I'm-glad-to learn Loglan, and go to a restaurant, if accompanied [by] you.
K: Evidently I eat if I tutor you.
D: Evidently I'm *buying* the meal, am I? (I meal-ly buy, is-that-it?)
K: *That* obviously is-the-tutoring price.
D: I agree, so-long-as [I] choose the restaurant. Perhaps we['ll] go [to] the Mexican, or the Chinese. But I *am-weak-willed*, oh dear. You are-fonder [of] the Mexican or the Chinese? (how-related-to)
K: In-fact I like your-past reply. Both.
D: The Mexican *and* , is-that-right, the Chinese?
K: Yes. You should have said "onoi" (exclusive or), and-not "a" (inclusive or). "We go to the Mexican [one], or-else the Chinese [one]" In-fact I am-very hungry. Also we shall more loglan-use. And you will order in Loglan.
D: Probably it's-not-the-case-that someone-x uses-Loglan at the restaurant.
K: That's not true. There's *us*, you see! (It's-not-the-case-that, that statement is-true. And someone-x is *we*, |satisfaction|.)

Lesson 7 At the Mexican restaurant

K: Hey! Hey, Waiter!
Obviously noone pays attention to the customers here. (It's-

not-the-case-that someone-x is customerly attentive here)
D: Perhaps if you use English or Spanish, then someone will-serve us. There probably isn't a Loglan-speaking waiter here. (It's-not-the-case-that someone here is-a-waiter, and loglanist.)
K: In-fact, I know that waiter. And *he* (t=tobsua) certainly is-a-loglanist.
D: Oh. Perhaps [forethought] he goes [to] us if you call his name.
K: Perhaps you are-right.
Hey, Tom!
T: In-fact the-word Tomas names me. Hello Karl.
Stranger, *you* must be mad if you are tutored in Loglan by Karl, or you are related [to] him [or both]. Oh-I-see! You must be *Dana*.
(Evidently *you*, O Not Known [One], are mad, if [you] loglanly are-tutored [by] Karl, inclusive-or you are-related [to] him.) (You are *Dana*, probably.)
D: Yes (certainly) I am Dana. Are you a-friend-of Bro?
K: He is-a-friend-of and annoys me.
Now, O Friend and Bothersome Waiter, may I order something?
T: Tomas *Delrios*, at your service. (|pleasure+intent| serves you.)
D: Delrios!
Are you related [to] Inez?
T: She is-[my]-sister, and now visiting me.
D: Are *you* actually Mexican?
T: I am-Mexican-American. But in-fact this restaurant now is-owned-by the Shun family. And-in-turn Miguel Hernandez owns the Chinese restaurant. *These* restaurant owners sure are cultural *exchangers*, aren't they?
K: Is this a *restaurant* actually? Do you sell food here, or make jokes? (Someone here foodly sells, how-related-to joking?)
T: Both, of course.

Lesson 8 Betty telephones

D: Hello. This is Dana. (The Dana speaks)
B: I am Betty. Please-may I speak [to] Karl?
D: Unfortunately he's not here. I'd be glad to give him a message. (|Pleasure| I transmit the subject-of-talking.)
B: I don't care. When does he come back?
D: I'm not sure.

B: What a nuisance.
D: May I ask you [a question]?
B: You may.
D: Which Betty? Are you Karl's friend?
B: Yes I'm a friend of his. But I'm not sure what, delete, delete, delete sentence, damn!
D: I'm *stupid*, dammit! Of course *I'm* the one who must say [it] clearly. The friend who repaired K's car.
B: Yes, I am (f=fremi).
D: Very good! He talked [to] me [about] you. Don't be-afraid. What was said about you was *good*, of course. And cars interest *you*, don't they?
B: Yes. And did he talk [to] you [about] my car?
D: Is it fast, and older [than] you?
B: |Annoyance| no! The bodywork, actually, and not the important [parts] [main predicate] is-old. The *engine*, for example, is-young.
D: And what are-important parts [of] a car? For example, |question| the engine and-jointly the braking system [main predicate] are-important?
B: Yes. In-fact the engine and-jointly the brake-system and-jointly the chassis and-jointly the steering-system and-jointly the electrical-system are-important [to] me [in] cars.
[*You will notice that* ***lo*** *can be translated into English in various ways, depending on the flavor of the sentence.*]
D: I see. I don't understand cars.
B: Gladly I [would] teach car matters [to] you. (car-ishly relevant [things]) And I and-jointly Karl teach-each-other.
[*Note that in Loglan, once* ***Kai*** *has been established as indicating Karl, we don't need — as we do in English — to keep re-establishing who we are talking about.*]
D: That's nice. *You*, certainly, expertly use-Loglan.
B: How kind! But unfortunately not. In-fact I easily [group next] loglandically talk [to] you [about] cars. But other subjects [main predicate] are very difficult.
D: [That's] a common experience! *Customary* subjects are certainly easy.
B: Thanks! And may I go [to] your house this evening?
D: With-pleasure you-may! And Karl *will* certainly be-present.
B: Thanks goodbye.

D: Take-care!

Lesson 9 Please meet Betty. (know-person)

K: Hello!

D: Ah! I was-about-to-do the-event-of despairing-of the-event-of you return here. ([to] this)

K: What's happening?

D: Betty phoned. She hoped to talk [to] you.

K: What about? (What is-the-subject?)

D: Dunno.
Well apparently the Loglan-using teacher is learning about cars from the car-repairing teacher. (the act-of-using-Loglan [sort of] teacher [main predicate] learns car matters [from] the act-of-car-fixing [sort of] teacher.) How interesting!

K: Clearly I enjoy learning and teaching.

D: Right. Should B use Loglan tonight? In-fact, she is coming here.
[*Note that* ***godzi*** *is sometimes better translated as 'come'.*]

K: Really? Once-more, of-course.

D: That's-probably-it, the cause of the-fact-that your pupils [main predicate] are-fond-of you.

K: In-fact my pupils *joke*, also. But *Betty*, for-instance probably, is-fond-of me.

D: That's no surprise! (I observe the property of awareness.)

K: Are you sure that Betty is-coming [to] us?

D: Yes. And please stop the-act-of annoyingly walking!

K: Are you staying here? ([at] this)

D: Yes, obviously! B *wants*, certainly, to meet me face to face. (seeingly meet me)

K: Please be-quiet. Betty now is-here.
Please come-in, O Betty!
How beautiful you are looking! (that-which-appears-to-be-the-quantity-of you being-beautiful)

B: How kind you are! (the-mass-quantity-of you kindly say) And *this* must be Dana. (this certainly is Dana)
Pleased-to-meet-you. (let-us happily-meet)

D: *Please to meet you*, certainly.

K: How happy! Unfortunately Dana has to go now. (is-obliged-to the-act-of now going)

D: Actually I don't.

B: In-any-case I want to talk [to] you and-jointly Dana, O Karl. And I have a question about learning Loglan; (I am-posing-a-question [about] loglan-learning) and perhaps you and-jointly D want to reply.

[*Erratum: The Loglan text has* ***ju kenti****. This should be* ***fu kenti****. (****Kenti*** *... is a question about ... put by ... to ...) Here it is the questioner we want, not the questionee.*]

Lesson 10 Betty's question

B: Why am I learning Loglan? (for what justification)

K: Why do you ask? (from what motive)

B: You *are-a-programmer*, O Karl; for-that-reason you are interested. And-apparently Dana is interested in language and culture. (interested [in] the-mass-of language and-jointly culture matters-pertaining) I *am-a-car-mechanic*, however, so why am *I* , I repeat, learning Loglan?

K: And despite-what you learn-loglan?

B: That Loglan *is-useless*, apparently, [for] a (the-mass-of) car-mechanic.

K: And according-to-what/whom Loglan is-useless? You *happily*, certainly, learn it. Isn't that important? (|Question| It's-not-the-case-that that-situation is-important?)

B: It (**da** = **tio**) is-important [to] *me*, certainly. But it doesn't help one in life. (However NoT, it life-experiencingly helps)

K: What helps in life? In-fact in-other-words Loglan is not *monetarily* valuable, is that it?

B: Boss believes that Loglan is-useless because (logical premise) it doesn't make me a better mechanic. (It's-not-the-case-that it improves the-mass-property-of me being-a-mechanic)

K: So what? But your using Loglan is actually certain to improve your inventive thinking. (But in-fact it's-certain-that the-mass-event-of you using-loglan [main predicate] improves the-mass-property-of you inventively think?) And isn't inventive thinking a property of expert mechanics?

B: Yes.

Why (motive) you *are-silent*, Dana? Do you agree [with] Karl?

D: Yes, because (reason) K very wisely talks. And certainly what one enjoys, if it improves and does not worsen you as a *person*, Betty, then it's worth learning.

(Certainly the-mass-of that-which-is-enjoyed [main predicate] if [it] improves and-not worsens the-mass-property-of you being-a-person, Betty, then being-learned-ly is-good.)

Anyway you're probably now improving your skills, because you are a person who both improves her skills and enjoys learning. So clearly, because of that, do learn Loglan.

(And-in-any-case probably you now are-unintentionally-improving the-mass-properties-of skill, because-of (premise) both the-mass-of improving the-mass-property-of skill, and the-mass-of-events-of enjoying-learning [main predicate] are-properties of-you. Obviously because-of (reason, justification) this-situation, *learn*, please Loglan.)

B: I want later to use-Loglan like *you* , Dana.

K: And helped-by me, you will. And perhaps Dana will help as-much-as I.

Lesson 11 Mrs Fujitsu's letter

O Respected-One,

I-hope respectfully i t's-not-the-case-that the-amount-of summer heat bothers Respected-One. Probably Japanese summers are hotter [than] yours. Wish me luck! Hubby and I would-like-to thank respectfully you [for] the invitation (event-of inviting). Of-course we (I and-jointly 3rd person) *consent* |happily|. However |obligation|, I'm sorry-to-bother-you, I inform R (=Rien) that Hubby, and not I, lectures. Although I and-jointly he (M=Merm) co-author books, yet *I* in-fact follow him, [in order to write down] ideas. He systematizes them (v=vidre) according-to my notes (mass of writing), so I am Author, and Hubby is *Lecturer*, I'm laughing. May we nevertheless attend the gathering?

Now we (I and Hubby, not the audience) are-presently composing "Where is-located Loglandia?" (that-which-is-indicated-by "...."). If you both understand Loglandian-culture and know-about Loglandian-territory, then you are-comfortable [with] the-event-of being-a-Loglanist. And also, knowing the uses of Loglan is comforting. Unfortunately it-is-not-the-case-that the-typical Loglanist knows their (l=logli) culture and-jointly language. Please be-comfortable! Those Loglanists are few, even though there are few Loglanists anyway.

(The-set-of-there Loglanists [main predicate] *is-small* certainly, even-though (contrary to premise) the-set-of-all, also, Loglanists is.)

However the young are small, and then (and-that-is-before) [they] grow.

Our cultural-exchange experience by-means-of Loglan [is] perhaps a-different subject (of talking). You (R=Rien) probably know the story of our first meeting. (our first-meet-story) I was an-Indian student in Japan. And H (=Hubby) [was] a-teaching-assistant-to my professor. And we decided [to] together learn Loglan. And we were soon more at home in Loglan than in the other languages we were learning. (very-soon we [were] more-linguistically-comfortable [in] Loglan [than-were] we [in] our other learned languages.) Of course I now speak Japanese well but don't write it. (I now well [group following predicates] Japanese-language speak, and-not write) And H is-comfortable-in Hindi.

Anyhow, experiencing other cultures *is-beneficial*, certainly. However if you prefer the other subject(s), then certainly we consent. Actually Hubby will prefer to lecture [about] the content of our book [to] those Loglanists. There are many relevant topics. (The-set-of-all relevant lecture-topics is large.) Loglandian culture, and cultural exchange, and the Loglan's effects on thinking, and Loglan fiction (fiction as part of L culture), and comparison [of] Loglan [with] other languages [close po-clause], and "Where is Loglandia?" are a partial set [of] them. (f=nu fomtaa) Please choose one topic.

Once-again, I-am grateful. Take-care.
Quoth Sita.

Lesson 12 An arithmetic lesson.

(One-event-of teaching arithmetic)

M: What is five times three? (give-further-identification-of the-number 5 x 3)

P: Dunno.

M: Paula, think! Five times three is five plus five plus five. (the-number 5 x 3 is the-number 5 + 5 + 5)

P: So it (f=fetiate) is fifteen.

M: Right! Five time three *is* certainly fifteen.
Please don't look-at the clock!

P: But the arithmetic lesson [main predicate] lasts-in-minutes the-number [emphasize next word] *forty-five* ! And you began at [emphatic] *Eleven* ! And it's now *twelve-o'clock* ; (this is-the-event-whose-clocktime-is twelve-hours.) therefore the-present lesson has [emphatic] *lasted-an-hour* !

M: I had believed that you [emphatic] *in-the-past* knew-how-to-use numbers! In-fact I believed that the-present lesson would last the-number one-hour.

P: So we immediately *stop* , right?

M: Perhaps. But [you (Attitudinals refer by default to **tu**.] must more-attentively learn.

P: Numbers aren't interesting.

M: But they (n=numcu) just-now (very recent past) certainly were-interesting-to you. Obviously they don't seem [emphatic] *very* relevant to life. Isn't this so?

P: Perhaps.

M: Therefore we (mi ze tu) by some method, must make them relevant.

Let's see. (I'm trying to think of something)

I know! (I emphatic have an idea) Suppose if I give you one sum-of-money [worth] the-number one-hundred-dollars, and this catalog, then you buy what [from] it?

[*Erratum: The order of sutori arguments to* ***donsu*** *is incorrect. (****Donsu****: ... gives ... to ...) The sentence should be* ***Kanoi mi eu donsu lo nema dalra tu, ...*** .]

P: Can I have it now? (May I now be-given?)

M: Pay-attention-to the-word suppose, please! Let's now begin a pretend. Suppose you possess one-hundred pieces-of-money [worth] the-number [one, by default] dollar. And you spend how-much on it?

P: *One-hundred*, obviously.

M: *You*, lets-suppose, will buy how-many-kilograms-of chocolate?

P: The chocolate that-is bought by me will weigh-in-kilograms the-number *ten*, yummy!

M: There-you-are. And suppose if you buy five [of] these three-dollar-things, then what is-the-price?

P: Fifteen-dollars.

Certainly this is-more-interesting now, when we pretend-to use real money.

M: I agree.
Now, get a job in a shop, please! (shop-ly become-employed)
P: I'm joking. But in fact this is *very* , certainly, interesting.
M: I'm sure [it is].

Lesson 13 In Betty's workshop.

D: Hi Betty. Wow, that's heavy!
(|surprise| I observe heavy things)
B: That's why I'm using this hoist. Don't worry. The motor is not going to fall. What are you here for? Do you want to help me with the stripping down?
D: No. I'm sure you said the parts were new.
[**cninu** means *new*, but in the sense of being new to someone. Whereas things that haven't been around long are called *young* in Loglan]
But they look old.
B: They are in-terms-of-use, but not time-wise old. For example the motor is now three years old.
D: So (inferrably) "How old is the car?" is a difficult question.
B: Yes. But I can tell you the age of all the parts. For instance the body (shell) is twenty nine years old.
D: How fast do you drive?
(You operate-a-car measurably-fast how-much?)
B: Hey, are you a cop?
D: Of course not. In fact I came to you to tell you that Audrey says two important people will give a lecture at the school.
B: Which two important-ones?
D: (Each of) The two important ones is a Fudjitsu. (someone called Fudjitsu). That name is new to you also, isn't it? The set of (the same) two important people is a Japanese-person married couple, and are the joint-authors of a book about the (set of all) features of Loglan that are Japanese-language like.
B: When are they lecturing?
D: On the Seventeenth (day of current month), probably. That's a Saturday.
B: Excuse me.
Damn the background noise.
On the *Whatth*, again? (what ordinal day of month)

The "Low Loglan" convention D is talking about is to treat clockhours

as named integers (**Nen**, **Ton**, **Ten**, etc.) and days of the month as named ordinals (**Nerin**, **Torin**, **Terin**, etc.).

D: There's a bit of slang (low Loglan) for you! I hope you don't talk to Karl like that.
B: Anyway.
D: Anyway, on the Seventeenth.
B: What time will the lecture be?
D: Seven thirty p.m.. (The-number nineteen-point-five-hours)
B: *I* aim to be there. The Boss has no power over Saturdays.
D: Maybe you should invite him to go with you. Apparently he ought to learn about Loglan.
B: Really! I know now what his answer would be. It would be "Never in a million years!" (On the Zero-th (day) of the Zero-month)

Lesson 14 About Karl and Audrey.

D: Hello Karl. Are you going to attend the Fudjitsu lecture?
K: I don't know. In fact, between you and me, I'm quarreling with Audrey, so I'm not comfortable attending something at her school.
D: What is the quarrel about?
K: Correct teaching-techniques. O's are sometimes non-Loglandical, or even surprisingly certainly anti-Loglandical.
D: Is that so |surprise|?
K: She likes practice, and ordinary talking. And she is a good teacher, so a lot of people here talk Loglan. But only a few think loglandically, or even experience logic. And logical thought is basic to Loglan.
D: Non-Karl things are seldom correct. She teaches logical thinking by means of language-play. Her starting the Loglan School was motivated by her wanting to teach Loglan. In fact she teaches Loglan to nearly all the Loglanists here.
K: But how many of them actually speak Loglan?
(But the quantity of l (these Loglanists) who are actually Loglanists is what?)
She stops Loglan being special. And it has to always be special, and not an ordinary language.
D: "There are many Loglanists. And they have many motives."

(Many-x are Loglanists. And many-y are motives to-actor x.) You know that one, don't you? Probably not all Loglanists are interested in logic.

K: But still, you have to understand logic to understand Loglan.

D: Maybe. But some people hope that language-knowing Loglan will make them understand. I hope everyone will understand both Loglan, and logic. But probably before that (happens) some people will know L as a language. You once said something similar, about mathematics, that people often learn the method before the reasons and purposes.

K: Does Audrey teach only methods? What system are you learning, now?

D: Negations. (Things characterized by the word no)

K: Say the normal form of "It is not the case that someone x gives everything y not to Peter", please.

D, after thinking silently: "Someone gives everything to Peter".

K: Right! And good for you, using quotes! I aim to attend. And I hope to meet at least one other Loglanist there.

Lesson 15 Where is Loglandia?

A lot of people ask why I am a Loglanist.

(Many someones x ask me about the X such that, motivated by X, I am a Loglanist.)

Obviously there are many motives, and many reasons. For instance Loglan is a scientific tool. In particular, one of my professors wanted to experiment with Loglan properties and their interesting possible effects. Also it is certainly a communication tool. In particular I used Loglan on another student, and she is now married to me. For that reason Loglan is important to me certainly. And it is a moderate earning-tool for us. And in particular I and-jointly she (s=stude) Loglan-language-ly work. But whenever someone asks me about Loglan, my answer is something else, and always surprises them. It is certainly a means of travel. In fact I answer that experiencing Loglandia is very pleasant and interesting to me.

Oh dear, what a nuisance—somebody asks, "Loglandia! Where is Loglandia?" And they insist on showing me maps. (make me look,

rather than **vizlei**, *let me see*)

"Which country is it? It doesn't exist, |there you are|" they say.

"What is it like to be a country?" I ask.
(For any x, x is a country is-equivalent-to what?)

"All countries are visited. And all visited things are physical. And Loglandia, since not physical, is not a country," they say.

"How many disk drives does your computer have?" I ask.

"What does that mean? Anyway two floppies and one hard drive," they say.

"But your operating system lists a-set-of-five drives," I say.

"Two of them are virtual drives," they say.

"The word "virtual" means that for any x, x is virtual if and only if x does not *physically* exist, but behaves like a physically existing thing. Isn't that true?"

"Yes"

"Well, Loglandia is a virtual country. Its cities are groups of loglanists, and also computer networks. One experiences it by telephones or modems. And also certainly X (that someone) experiences a different language-form and culture. If you doubt that, then you ought to seekingly visit L. (visit L with a view to seeking something in it). I'd be happy to escort you. But finally, because Loglanists act like citizens of L, then obviously L is their country, (the country of l) and it is a virtual country. (it is-that virtually)

Lesson 16 Finally, what is Loglan?

I tried to answer that at the beginning of the book. I hope that the amount you have experienced of Loglan's qualities is now enough for you to be able to answer it. Loglan is certainly very different from English. Hopefully, you have come to like its non-English way of thinking. Its degree of precision can sometimes perhaps be annoying. But its expanding the mass of things conceivable by you is probably a sufficient reward to you for the difficulty and arduousness.

I am happy that you discovered at least a few things that are interesting, or logically helpful, properties of Loglan, and also that there are many language games, and (many) parts of Loglan culture, and so forth. And in fact Loglandia is a big-ly conceivable but small-ly discoverable place. And therefore probably (the question) "Where is it?" is not answerable by anyone now. And you must join with other Logli in answering it (that question) later.

Now as regards the other question, namely "Why (for what motive) do I bother?", I repeat, you should (objective sense of 'probably') be able to answer s (that question) now. And the several (fictional) characters, such that we (you and I independently) read-met σ (meet sigma through reading) in these written examples, have been justified and motivated to be Loglan learners by many different things. And for example Dana happily discovers-by-learning languages and cultures. And he (Dana) likes linguistically-experiencing logic. And *Karl*, probably, enjoys the property that it (Loglan) has in being an aid to logic, and (its) precision. And also he (Karl) with it (Loglan) experiences-logic. And Betty is pleased with the property it has of enhancing creativity. And *Sita*, probably, is interested in Loglandian art. And her (Sita's) spouse experiences linguistically Loglandian culture and Loglandian people. And in fact, between us, everyone who is one of this group of fictional Logli has *fun,* certainly, with Loglan.

In short, Loglan is a communication tool among Logli, or among them and their computers. And also L is a means of *travel*, possibly, to one or more virtual countries. And also possibly L is a tool-of-thought. And also L is arguably a language. And helped by *you,* I hope, L will be a real one.

Finally, what is Loglan? And why should you, surprisingly, bother? And it's possible under some conditions that you and exactly *no* others, perhaps, will answer according to my answer(s). And-or not according to them. And however Loglan properties and learning-motives will be your own. (you-ish: predicable as modified by **meatu**).

Judge the language! And only-if [you] judge yourself.

Vocabulary

For ease of reference, Little Words, Primitives, and Complexes are listed alphabetically. The number on the right indicates the Lesson in which the word is first used.

biu	possible	16	su	at least	13
-cu	[forms set]	13	sue	[onomatopoeia]	16
dau	probably	14	tie	by means of	14
eu	suppose that	13			
ga	[deferred subject]	16		**Primitives**	
gi	[end fronted arg.]	16	bakso	box	16
goi	[end quantifier]	15	bakteri	bacterium	16
gui	[end ji/ja phrase]	16	barda	rewards	16
ja	[subordinate clause]	16	basni	base	14
jae	[subordinate clause]	16	brana	is born	16
jao	[subordinate clause]	16	breba	bread	14
ji	[subordinate clause]	16	brito	British	16
jie	[subordinate clause]	16	bufpo	opposite	14
jio	[subordinate clause]	16	cartu	map	15
lao	[borrowed name]	16	cmiza	has fun	16
nea	negative (number)	13	djudi	judges	16
nero	the ...est	13	dutci	doubts	15
nobi	is not	14	famva	famous	16
pae	and so forth	16	fizdi	physical	15
peu	concerning	14	hirti	hears	13
pi	decimal point	13	hotle	hotel	13
piu	in particular	15	intestini	intestine	16
-ra	...-some	13	kangu	dog	16
ravi	everywhere	13	kanmo	is able to	13
re	most of	13	katli	is characterized by	15
-ri	the ...th	13	katmu	cat	16
ri	a few	13	ketpi	ticket	16
-ro	...th best	13	komta	computer	15
ro	many	13	kruma	room	13
ru	enough	13	lufta	lifts	13
sa	almost all	13	mamlu	mammal	16
sao	[borrowed predicate]	16	matci	machine	15
si	at most	13	mathe	mathematical	14

merji	is married to	13
modvi	motive	14
murku	monkey	13
nenri	is inside	16
norma	typical	14
patce	apparatus	15
polsi	policeman	13
porli	has power over	13
pozfa	opposes	14
primatu	primate	13
raznu	reason	14
retca	differs from	15
samta	same as	16
satci	origin	16
sitci	city	15
spebi	special	14
stari	surprises	15
stifa	stiff	15
stude	studies	15
sumji	sum	16
traci	travels	16
trime	tool	15
tsufi	is sufficient	16
vidju	view	13

Complexes

baprysio	operating system	15
blemao	makes ... look at	15
bufsensi	non-scientific	14
caprie	print tool	15
capypae	print device	15
cildre	precise	16
cirdui	learn about	16
cirmoi	motive to learn	16
cirpai	lesson	13
cmehea	subsidizes	16
damlogla	slang	13
dicfoa	teaching method	14
djacea	learns about	13
donhea	donates	16
dridja	is familiar with	14
duodza	virtual	15
durcia	practises	14
durfoa	method	14
duvcia	learns (exploring)	16
duvrai	looks for	15
fanbalci	disassembles	13
fekteo	modem	15
funcea	grows fond of	16
gozkii	goes with	15
hijkinbeo	invites	13
hirtakrie	communicat'n tool	15
jurnyrie	means of earning	15
klemue	is extreme	16
kopmai	copier	15
kopypae	e.g. pantograph	15
lalcue	tells age of	13
largra	is a classic	16
lenfoa	dialect	15
lenpli	uses language	14
lenspe	experience (lang.)	16
lispro	lists	15
lodhea	aids logic	16
lodpeo	thinks logically	14
lodspe	experience by logic	16
logdia	teaches Loglan	14
logpozfa	anti-Loglandic	14
lokfoa	dialect	15
melkukra	has speed of	13
nerdei, etc	monday	13
nermea, etc	january	13
netsio	network	15
nomfoa	normal form of	14
norgleca	non-English	16
norlogla	non-Loglandic	14
norstifa	flexible	15
norvia	does not see	14
nurcko	effect	15

nurcuesaa	quotation mark	14
nurdui	is known to	16
nurkai	quality, property	15
nurmue	moderate	15
nurpeo	topic	16
nurpli	is used by	13
nursri	document	16
pakcia	learns before	14
pebtoa	despecializes	14
penfoa	thought form	16
penrie	thought tool	16
pensai	is pensive	14
plefoa	game	16
pogmai	programed device	15
racrie	means of travel	15
racyspe	experiences (travel)	15
repduokii	answers with	16
ridspe	experiences (read)	16
ridsrimai	disk drive	15
ridydui	discovers (read)	16
roicko	annoys	16
roirtao	quarrels	14
sacdou	founds	14
selfau	takes the trouble	16
sesduvrai	experiments with	15
sesrie	sci. instrument	15
smicue	confides	14
specia	learns (experience)	16
spegoi	goes to	15
stupeu	story character	16
sumdui	finds sum	16
tcihea	feeds	16
tedklipu	holds attention	16
turflo	is arduous	16
tursia	workshop	13
vefhea	aids creativity	16
zavmoutsu	is excessive	13

All The Words

For convenience of lookup, this is an alphabetic list of vocabulary from all volumes, showing the lesson in which each word was first introduced.

a	2	botci	3	cildre	16	cnulogli	4
ae	2	brana	16	cimra	11	co	7
ai	2	brato	12	cio	12	coi	10
-ai	3	breba	14	cirdui	16	comtu	11
anoi	6	breko	8	cirduo	1	corta	5
ao	2	brekysio	8	cirfundi	10	crano	11
au	2	brili	8	cirgru	11	crina	4
ba	1	brito	16	cirhea	6	cu	7
bakso	16	broda	3	cirkii	11	-cu	13
bakteri	16	brudi	3	cirmoi	16	cutri	11
baormao	3	bu	1	cirna	1	cutse	2
bapra	5	bufpo	14	cirpai	13	da	1
baprysio	15	bufsensi	14	citlu	11	dalra	12
barda	16	bukcu	1	ciu	10	damlogla	13
basni	14	bunbo	8	ckaciu	5	danci	11
batmi	7	buo	3	ckamou	5	danpeo	11
be	1	ca	7	ckano	3	danza	9
bea	6	cadre	11	ckecoa	9	darli	3
bedpli	9	canoi	7	ckela	3	dau	14
bedyduo	9	cao	12	ckozu	3	de	2
bei	3	caprie	15	clafo	11	decti	12
beo	3	capypae	15	clesi	3	dekto	12
bi	4	cartu	15	clika	5	denli	12
bicio	12	ce	7	clivi	10	detra	4
bie	4	cefli	10	cluva	11	di	2
bilti	9	cenja	10	cmaciu	11	dicbukcu	3
biu	16	centi	12	cmalo	10	dicfoa	14
bivdu	9	ceu	6	cmavizrie	10	dichea	11
blabi	8	ci	5	cmehea	16	dickue	8
blanu	5	-ci	12	cmeni	10	dipri	11
bleka	11	ciha	7	cmepli	12	dirlu	3
blemao	15	ciktu	5	cmiza	16	dirtolsio	8
bo	1	cilble	11	cninu	1	disfiu	6

disri	11	eo	2	furplicle	10	gudmao	10
ditca	1	-eo	3	furvea	6	gue	5
djacea	13	eu	12	furvemcue	6	gui	16
djacue	12	eu	13	ga	3	gunti	11
djano	2	fa	1	ga	16	guo	9
djifoa	3	fadgoi	4	gandia	11	ha	6
djine	3	falremkao	9	garni	7	haijmi	4
djipo	3	famji	4	garti	9	haispe	9
djipua	6	famva	16	gatytaa	11	hapci	4
djudi	16	fana	11	ge	5	hapsocli	11
do	2	fanbalci	13	gea	9	hapsocvei	11
donhea	16	fangoi	8	gencue	2	hasfa	3
donsu	10	fapa	11	genza	2	hatro	11
dorja	11	farfu	5	gesko	11	he	1
dreti	5	fasru	8	getsui	8	hea	10
dridja	14	fatcou	11	gi	16	heahu	10
du	2	fatru	4	gigdo	12	hekto	12
dua	10	fe	12	gleca	2	helba	4
dui	10	fekteo	15	go	5	hijkinbeo	13
duo	12	felda	10	godzi	1	hijra	8
duodja	8	feodja	8	goi	15	hindi	11
duodza	15	feu	3	gozbeo	11	hirtakrie	15
dupma	4	-fi	3	gozkii	15	hirti	13
durbiesni	9	fircko	11	gramo	12	ho	12
durcia	14	firpa	8	gritu	5	hoi	4
durfoa	14	fizdi	15	grocea	11	horto	12
durtoi	11	fo	12	groci	4	hotle	13
durzo	1	foi	11?	grocycea	5	hu	3
dutci	15	folma	4	grujmi	11	hue	3
duvcia	16	fomtaa	11	grupa	3	humnu	1
duvrai	15	forma	11	gu	2	I	3
duvri	10	frelo	7	gubduo	9	ia	2
dzabi	11	fremi	5	gudbi	2	ice	7
dzoru	9	fu	2	gudbiu	9	iceci	12
e	6	fui	12	gudcae	11	ie	1
ea	2	fuipa	12	gudcanspe	11	ii	2
ei	1	fumna	1	gudcea	10	imoi	10
-ei	3	funcea	16	gudcko	10	inca	12
emou	10	fundi	6	gudkao	9	intestini	16

inukou	10	kentaa	8	kraku	3	lia	10
inumoi	11	kenti	3	krido	10	lie	3
io	2	kerju	2	kruma	13	likta	12
irau	10	ketpi	16	ku	7	lio	12
isoa	10	ki	7	kua	12	lispro	15
iu	2	kia	8	kukra	3	litro	12
ja	16	kicmu	4	kulbatmi	11	liu	3
jae	16	kie	3	kultu	7	liu	9
jao	16	kiha	7	kumtu	8	livsensi	10
je	5	kilgramo		kunci	7	livspe	10
ji	16	kilogram		kusmo	8	lo	1
jie	16	kilto	12	la	4	loa	3
jio	16	kinci	6	lae	11	lodhea	16
jmite	4	kincia	11	lagfompli	3	lodji	6
jokla	12	kingoi	4	lalcue	13	lodpeo	14
jolkeo	12	kinoi	7	laldo	3	lodspe	16
ju	2	kinsri	11	landi	11	loe	11
jue	5	kio	8	langa	3	logcia	9
junge	7	kisoa	11	lao	16	logcirna	3
jungo	6	kiu	3	largra	16	logdia	14
junti	5	klada	4	latci	10	logduo	9
jurna	10	kladycle	4	le	3	logla	2
jurnyrie	15	kladydru	4	lea	11	logle	7
ka	7	kladyflo	4	lei	3	logli	3
kae	11	kledja	8	leksio	8	loglo	7
kaidja	11	klemue	16	lemi	3	logmao	2
kakto	9	klimao	1	lena	3	logpli	4
kamki	7	kliri	8	lenfoa	15	logpli	9
kamkytaa	7	ko	7	lengu	1	logpozfa	14
kamla	2	kofcko	11	lengu	10	loi	4
kance	11	komfu	11	lenkofmou	11	lokfoa	15
kangu	16	komta	15	lenkou	11	lopo	1
kanmo	13	konce	8	lenpli	14	lu	3
kanoi	7	konmathe	12	lenspe	16	lufta	13
katli	15	kopmai	15	lerci	3	lui	11
katmu	16	kopypae	15	leu	11	-ma	3
kau	11	koshaa	7	leudja	8	-ma	12
ke	7	kou	6	levi	3	madzo	1
kenoi		kouhu	10	li	3	mamlu	16

marli	12	mutce	3	noo	6	ou	2
matci	15	na	1	norgleca	16	pa	1
mathe	14	nafa	11	norlogla	14	pae	16
matma	3	nahu	3	norma	14	pafa	11
me	5	nakso	3	norstifa	15	pakcia	14
mea	5	namci	7	norvia	14	pana	11
megdo	12	nana	11	notbi	8	papa	11
meksi	7	nanti	12	nou	7	parcai	11
mekso	6	Nao	5	nu	2	parti	8
meksymerki	7	napa	11	nu-	6	pasnai	8
mekykiu	6	nardu	8	nucunoi	7	patce	10
melkeo	12	natli	3	nukou	10	patce	15
melkukra	13	nazi	12	nuku	7	paza	11
meltio	12	ne	12	nukunoi	7	pazi	11
merji	13	nea	13	numcu	12	pazu	11
merki	7	nedpao	12	numoihu	10	pe	4
mermeu	11	nengoi	3	nunokou	10	pebtoa	14
metro	12	nenri	16	nurcko	15	penfoa	16
mi	1	nerdei, etc	13	nurcuesaa	14	penrie	16
midnai	12	nerjmistu	11	nurdui	16	pensai	14
mikti	12	nermea, etc	13	nurkae	11	penso	3
milfa	6	nero	13	nurkai	15	perdja	5
milti	12	netsio	15	nurmue	15	perdri	11
minta	12	ni	12	nurpeo	16	pernu	10
mipli	1	nigro	8	nurperpli	12	perti	8
mirdo	12	nio	12	nurpli	13	pertymao	12
miu	11	nirli	9	nursri	16	peu	14
-mo	12	nirne	12	nurvembuu	12	pi	13
mo	1	no	1	nurvia	3	pikti	12
modvi	14	no-	6	nusoaki	10	pinti	10
moi	10	noa	6	nutra	11	pio	12
moihu	10	noanoi	6	nuu	6	pismi	11
monza	3	nobi	14	nuunoi	6	piu	15
mordu	5	noca	7	nuzveo	9	plefoa	16
motci	8	noe	6	o	6	plekao	12
mou	10	noenoi	6	oa	2	plidja	12
mrenu	1	-noi	6	oe	2	plizo	3
mu	1	nokou	10	oi	2	pluci	10
murku	13	nomfoa	14	onoi	6	po	9

pogmai	15	ridydui	16	sirdja	8	sui	6
polsi	13	rie	11	sirto	8	sumdui	16
ponja	11	rispe	11	sismao	11	sumji	16
ponje	11	-ro	13	sisto	8	surva	7
ponsu	7	ro	13	sitci	15	ta	1
porli	13	roicko	16	sitfa	11	taa	7
pozfa	14	roirtao	14	skati	4	takna	1
prati	6	rozme	11	smicue	14	tao	3
primatu	13	ru	13	so	12	tarci	10
proga	10	sa	13	soa	10	tarle	4
pu	9	saa	5	soahu	10	tarsandui	10
purda	1	saadja	2	socgoi	7	tarsensi	10
ra	11	sacdou	14	socli	4	tcabapra	5
-ra	13	sacduo	12	socyjmi	11	tcaberti	3
racrie	15	sackaa	3	socysensi	3	tcanakso	9
racyspe	15	sadji	5	soi	11	tcaro	3
rau	10	samta	16	sorme	7	tcastosia	6
rauhu	10	sandui	11	spana	7	tcidaa	6
ravi	13	sanpa	2	spebi	14	tcidi	7
raznu	14	santi	9	specia	16	tcihea	16
re	13	sao	16	spedja	8	tcoko	12
rea	3	satci	16	spegoi	15	tcori	10
redro	2	sau	5	speni	4	tcure	3
reksio	8	se	12	spodru	9	te	12
rembiu	9	sekmi	12	spopa	9	tedji	3
remcli	5	selfau	16	spuro	5	tedklipu	16
remkao	9	sensi	10	srikii	11	tedmou	12
repduo	5	sesduvrai	15	srikue	11	telfyduo	9
repduokii	16	sesmao	10	srite	11	telfypli	9
respli	11	sesrie	15	stari	15	terdalra	12
resra	6	sesycko	10	steti	4	ti	1
retca	15	setci	11	stifa	15	tia	12
retpi	3	si	13	stise	9	tidjo	4
-ri	13	sia	3	stolo	3	tie	14
ri	13	sii	4	stuci	9	tio	3
ridcue	9	simfoa	5	stude	15	tisra	6
ridle	1	sinma	8	stupeu	16	titci	6
ridspe	16	siodja	8	su	13	to	12
ridsrimai	15	sirfio	12	sue	16	toa	2